

# RECOVERY INSULATION – 14/09/16

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Subject The Circular Building | Press Release|

Date 14th September 2016

Sheffield/South Yorkshire UK based [Recovery Insulation Ltd.](#) is proud to announce that Inno-therm®/Metisse® acoustic recycled cotton/denim insulation will be on display at the London Design Festival, taking place from 17<sup>th</sup>-25<sup>th</sup> September 2016. It is an annual event held to celebrate and promote London as the design capital of the world; and act as a gateway to the international creative community. Participating in this significant event, Arup is delighted to be collaborating with Frener & Reifer, BAM and The Built Environment Trust.

We are a Sheffield-based social enterprise/company and trading arm of the [Schools & Homes Energy Education Project Ltd](#)/Solar-Active charity. As a social enterprise, we stand apart from other insulation companies in donating a proportion of sales income to Solar-Active to conduct renewable energy and energy efficiency activities in educational establishments and general public.

The acoustic insulation was used [in](#) an International Broadcast Center at the Winter XXII Games in Sochi 2014. As part of broadcasting company's Green Initiative to avoid creating unnecessary landfill they chose to reuse and ship to Sochi the insulation used in their venue from the London Games, 2012. The broadcasting company purchased additional insulation to used at the Rio Olympics. Other customers have purchased Inno-therm for home and professional music studios.

Amina technologies is the world's leading manufacturer of specialist loudspeakers that get plastered in to walls and ceiling to make them fully invisible in application. Their products are used in high end residential and business premises where designers and architects specify AV and entertainment systems in environments which have to look the part. Amina utilise Inno-therm acoustic recycled cotton within their designs for four reasons. It is safe to handle i.e. it does not emit harmful or irritating fibres; it remains stable in volume, not collapsing with pressure; it is an environmentally recycled material which can be recycled again; and most importantly, it is a highly acoustically absorbent, reducing acoustic energy in areas that it is not required in.

Arup together with its partners is investigating how the circular economy can benefit the industry and the built environment, reflecting on the commercial, social and environmental opportunities of employing circular principles.

The Circular Building is a prototype. Designed and delivered by Arup, Frener & Reifer and BAM, with support from The Built Environment Trust, a number of partners have contributed to test circular economy principles in the construction industry and its supply chain. The Circular Building tests the maturity of circular economy thinking in the supply chain and examines what it means for building design. Can we design a building where, at the end of its life, all its components and materials can be re-used, re-manufactured or recycled? Asking this question profoundly alters design and construction priorities. Supplier engagement is critical, with both designers and suppliers challenged to think differently about materials and construction processes.

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All partners embarked on this prototype to test the challenges that the industry faces when incorporating circular economy thinking. This includes the impacts on design, procurement, construction, operation and deconstruction of the building. Taking a life cycle approach is critical to achieving true circularity. This has prompted conversations between the designers, the contractors and the wider supply chain around ownership of assets and new business models.

In building this prototype the multi-disciplinary team has learnt that there needs to be a significant change in the design process. Arup's designer have adopted a new approach. *"We have been challenged in how we designed, whether it is off site fabrication or design for disassembly. We had to constantly question every task we undertook as a design team as precedent has not been set with respect to the circularity of each component. There is also a cultural bias on how we design, and this was experienced as we collaborated to deliver the Circular Building prototype"*, commented Stuart Smith, Project Director, Arup.

A challenge has been set to material suppliers, as part of the supply chain, to respond to the demands for circular products. More widely how components are assembled and the inherent value that we create over the life of the building is also being questioned.

*"The circular economy provides an opportunity for all of us to rethink how we can create a future that values natural capital, improves humanity and leave a better world for future generations. It challenges us to rethink how we live, own, design and build our communities, towns and cities. As designers, we need to explore this new future and show the possibilities of how to create a world that does not inhibit, yet improves quality of life for people while caring for the planet. The circular building is a small first step into this future"*, added Simon Anson, Project Architect, Arup Associates.

Working in collaboration with clients, we are currently exploring the potential for circular economy thinking to be incorporated into the preparation of masterplans and development briefs to ensure exemplar standards can be achieved.

*"At the highest level of engagement about the circular economy we need to start a dialogue about mutual gains, one that influences all stakeholders. The circular economy model can drive innovation and new ways of working; we see this as a way of rethinking design and redesign thinking"*, stated Carol Lemmens, Director, Arup.

Waste is material without information; at the end of a building's life, materials cannot easily be re-used as key information, such as their chemical composition or strength, is not available. A Materials Database aims to solve this problem. Each material in the Circular Building comes with its own QR code containing the information required to allow re-use.

The Materials Database required input from the manufacturers as well as Arup's designers and material experts. This has been created using a cloud-based platform from which data has been fed to both the Circular Building website and the BIM model. Both the website and the BIM model can be viewed via QR codes displayed inside the Circular Building.

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Michael Reifer, Frener & Reifer, said “ *The creation of architecture is a sociocultural task that influences our future. In the circular economy, the credo "less is more" is not enough in terms of how we utilise our natural resources to safeguard the future of our planet, because “less” is still too much. “Zero is even more”, to live up to this credo, this is the challenge we are confronting*”.

Circularity can only be achieved with true collaboration and with designing and constructing the Circular Building, this prototype has only been possible with Frener & Reifer’s engagement and with the support of the many manufacturers who are also committed to testing the principles that underpin the circular economy.

Nitesh Magdani, Director of Sustainability, BAM Construct UK, said. “*The Circular Building exemplifies BAM’s aim of achieving a truly regenerative construction industry. We are reinforcing learnings from our other circular projects specific to the UK market and supply chain. This is invaluable for our project partners and to also educate our own Design, Construction and Energy divisions, ensuring buildings perform efficiently over their lifecycle.*

*"The building industry creates three times more waste than all UK households combined. This is simply unsustainable and is also bad for business and the economy, construction processes must change. The Built Environment Trust believes there are powerful social and economic reasons to change. With Circular Living and the Circular Building we hope to help inspire the public and the professions on how the reuse and regeneration of building materials can scale and lead to a revolution in how we build. We must see Government engage more in this process. The EU has pledged substantial investment in the area, we need the UK to pick up its commitment, too. If such an approach was widely adopted, vast amount of materials used in construction could be more easily re-purposed, driving economies and improving the environment"*, summed up Colin Tweedy, CEO of The Built Environment Trust.

All the partners believe the circular economy can enable the industry to tackle the complex nature of the built environment through multidisciplinary working, and this can drive a shift towards more sustainable forms of value creation and economic growth.

## **Notes to Editor**

Arup is the Ellen MacArthur Foundation’s knowledge partner for the built environment; sharing knowledge and collaborating with CE100 partners to accelerate the shift to a circular economy. Ken Webster (Head of Innovation, Ellen MacArthur Foundation) will be speaking at the conference on Wednesday 21<sup>st</sup> September.

## **Exhibition**

Circular Living  
8 – 28 September 2016

## **Installation**

The Circular Building  
19<sup>th</sup> September – 7<sup>th</sup> October 2016

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### **Location of the Circular Building c/o**

The Building Centre

26 Store Street, London, WC1E 7BT

Friday – Saturday 10am – 4pm

Exhibition and installation both free to visit

### **Conference**

Wednesday 21<sup>st</sup> September 2016

Conference: 15.30pm to 18.00pm

Private Viewing & Drinks Reception: from 18.30pm

<http://www.buildingcentre.co.uk/events/circular-economy-in-the-built-environment>

**The Circular Economy in the Built Environment paper** will be available on published on Monday 19<sup>th</sup> September 2016. The paper can be accessed through the following link: xxxx

The circular economy model aims to decouple economic growth from resource consumption. Arup's research outlines key principles of the circular economy, using the Ellen MacArthur Foundation's ReSOLVE framework to explore and contextualise practical applications in the built environment. Arup identifies how the circular economy can benefit the built environment. Reflecting on the economic, social and environmental advantages of employing circular principles. Arup believes the circular economy can help tackle the complex nature of the built environment through multidisciplinary working, and can drive a shift towards more sustainable forms of economic growth, urban life and value creation.

## **ARUP**

Arup is the creative force at the heart of many of the world's most prominent projects in the built environment and across industry. From 90 offices in 38 countries our 11,000 planners, designers, engineers and consultants deliver innovative projects across the world with creativity and passion.

### **Arup Press Enquiries:**

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BAM Construct UK is a leading construction and property services company. Our six business units (BAM Construction, BAM FM, BAM Properties, BAM Design, BAM Plant and BAM Services Engineering) design, build, refurbish and operate outstanding buildings. We are part of Royal BAM Group, which ranks among the largest construction companies in Europe, employing around 22,000 people. Our mission is to create an enjoyable experience for our customers by being collaborative, creative and sustainable.

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# FRENER REIFER

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FRENER & REIFER is a globally active, innovative building envelope construction company based in South Tyrol, Italy. As a solution developer, FRENER & REIFER engineers, fabricates and installs bespoke constructions in glass, metal and other materials for demanding clients and investors to designs by daring architects worldwide. Subsidiaries in Germany, France, Great Britain and the USA realise solutions developed by the parent company and individually tailored to their respective markets.

Founded as a traditional company over 40 years ago, FRENER & REIFER today realizes both highly complex building envelopes for major international projects and exclusive custom-made architectural designs as a modern structured operation.

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The Built Environment Trust

The Built Environment Trust exists to explore and encourage innovation in the built environment. It is an independent charitable organisation that provides support for educational, research and cultural activities. The Trust runs The Building Centre in Store Street, which opened in central London in 1932.

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