

## Yours truly reclaimed

Thornton Kay

The design, launch and future of a label for verifying the authenticity of antique, reclaimed and salvaged building material, products and elements



*The FCRBE 'Activity 3' plan was to develop and implement a Truly Reclaimed label scheme, aimed at improving customer confidence and addressing issues of authenticity. A Truly Reclaimed label scheme (TR) would be designed and implemented. This included developing systems for verifying the origin and authenticity of materials, affixing appropriate signage and distributing it amongst a group of suppliers supporting TR. As an initial pilot for a broader application, TR would be devoted to wood products. As part of an awareness campaign, large buyers of reclaimed wood (i.e. retail chain or coffee shop franchise) would be invited to make a public claim.*

The following FCRBE deliverables were covered in this report:

WPT1D3.1 Design and research Truly Reclaimed

WPT1D3.2 Launch of Truly Reclaimed labelling

WPT1D3.3 Implementation of Truly Reclaimed

WPLTD2.2 Long term plan for Truly Reclaimed

WPLTD2.7 Presentation of the Truly Reclaimed to stakeholders

WPLTD1.5 Long term methodology for statistics - covered partially in this report

### **Section 1: WPT1D3.1 Design and research Truly Reclaimed**

This document presented the preliminary steps. A review of similar labelling schemes was conducted in order to develop appropriate assessment criteria, graphic design and implementation methodology.

### **Section 2: WPT1D3.2 Launch of Truly Reclaimed labelling**

A working final version of the Truly Reclaimed label scheme would be launched for adoption by stakeholders (in the first place several providers and regular buyers of reclaimed wood).

### **Section 3: WPT1D3.3 Implementation of Truly Reclaimed**

An implementation report on the Truly Reclaimed wood, including the report on the awareness campaign. This report presented feedback from the customers on the different types of labelling and discussed the possible commercial benefits of the labels. This report would also be sent back to the buyers and the dealers who took part in the campaign.

### **Section 4: WPLTD2.2 Long term plan for Truly Reclaimed**

The long term plan would assess ways in which the objectives of specifiers in mainstream construction might be met in future. It would also discuss the ways in which the Truly Reclaimed label would help with measuring the carbon benefit of reuse.

### **Section 5: WPLTD2.7 Present Truly Reclaimed to stakeholders**

A presentation of the truly reclaimed scheme to reuse operators and other concerned stakeholders. This would be 15 minutes live, live-streamed or recorded, for the final event which would also be posted on [futureuse.co.uk](https://futureuse.co.uk)

### **Section 6: WPLTD1.5 Salvo contribution to the long term statistics methodology**

This final report explained how the survey of the reuse sector would be continued after the project ends, based on the methodology from WPT1. Measuring the mass of building elements being circulated was crucial to carrying out relevant policies.

This document has been produced as part of the project Interreg NWE 739: *Facilitating the Circulation of Reclaimed Building Elements* (FCRBE), October 2018 - January 2022. This report combines deliverables WPT1D3.1, WPT1D3.2, WPT1D3.2, WPLTD2.2 - a series of interlinked deliverables on the Truly Reclaimed label scheme.

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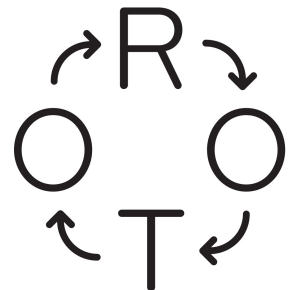
With thanks to ... see p75

This document was produced by Salvo with co-funding support from the European Regional Development Fund through the Interreg NWE programme.

Salvo project meetings were held under the Chatham House rule<sup>1</sup>: 'When a meeting is held under the Chatham House Rule participants are free to use the information received but neither the identity nor the affiliation of speakers or other participant, may be revealed.' All statistics collected were anonymised, and statistical reports were aggregated and regionalised to protect privacy of individuals and confidentiality of business sources.



The FCRBE project was a partnership comprising Bellastock, the Belgian Building Research Institute, Brussels Environment, Centre Scientifique et Technique du Bâtiment, the Construction Confederation, Rotor, Salvo Ltd and the University of Brighton. The FCRBE project leader was Rotor. Leader of the Truly Reclaimed deliverables was Salvo Ltd.



**University of Brighton**

<sup>1</sup> [https://en.wikipedia.org/wiki/Chatham\\_House\\_Rule](https://en.wikipedia.org/wiki/Chatham_House_Rule)

## Summary

Replicas, sold as genuine for hundreds of years, have seen a rapid rise, increasingly manufactured on a large scale in faraway places under uncertain working conditions. This has contributed to a significant reduction in the reclamation and sales of, for example, reusable demolition timber and a consequent increase in carbon emissions.

Salvaged materials are celebrated for their connection with history and the environmental value that reuse brings to projects. Salvo's new Truly Reclaimed label is designed to provide assurance that a product or batch of material is genuinely reclaimed and offers a genuine reduction in carbon emissions.

Most reclamation businesses stock some reproduction items but these are distinctive, allowing free customer choice. Unfortunately, new material manufacturers may market new products using the language of 'reclaimed' while publishing warnings about authentic reuse.

We believe reclaimed is a brand worth protecting, so the Truly Reclaimed campaign will increase the visibility of genuine reclaimed products. The aim of the label is to verify authenticity and connect people to the products they are buying, or experiencing in the places they visit, that feature Truly Reclaimed materials. The information accessed through the unique QR codes can range from the material's past life to reclamation rescue stories to the embodied carbon that was saved through reuse.



Truly Reclaimed certification is an addition to the Salvo Code, a peer-reviewed community of businesses with high standards of responsible sourcing. We also see the future potential in the label for professionals who would like their commitment to reuse measured and recognised. The label may document a long

journey from dismantling to reclamation yard, or it may record a simpler switch from demolition to reuse on the same site or to a nearby site by an architect or engineer.

Our mission is to encourage more business for sustainable companies and to grow awareness of the vast amount of reclamation and reuse which is unrecorded and therefore goes unnoticed. So, a growing map of suppliers and eco-conscious design destinations that feature Truly Reclaimed materials will be the heart of the label.

Sara Morel  
CEO Salvo Ltd

# Content

<b>Summary</b>	<b>4</b>
<b>Introduction</b>	<b>7</b>
Salvo brief history timeline	9
SalvoWEB	10
eSalvo	10
Salvo Code	10
<b>WPT1D3.1 Design and research of Truly Reclaimed</b>	<b>12</b>
The evolution of a label	12
Truly Reclaimed 2016	14
Business models	14
Specialist dealer - dismantler, stockholder, marketer	14
The runner - informs and sells stock to dealers	15
Smaller salvage yard - buyer, stockholder, seller	15
Reclaiming demolition contractor - stockholder, seller	16
<b>Market research, discussions and workshops</b>	<b>16</b>
Meetings, events, communications 2015-2021	16
Market research with BRE in 2014 -16	18
Upstream, stockholding and downstream stakeholder comments	19
Upstream government regulator	19
Upstream disposers of demolition material	20
Stockholding reclamation dealers - UK & Ireland	22
Stockholding reclamation dealers - Belgium	26
Stockholding reclamation dealers - France	28
Stockholding reclamation dealer - USA	28
Downstream architects, clients, end-users	28
Consumers, visitors and private individuals	34
Celebrity supporters of reclamation and reuse	35
Institutions, consultants and trade bodies	35
<b>How to increase carbon emissions</b>	<b>38</b>
<b>WPT1D3.2 Soft beta launch of the label</b>	<b>40</b>
Introduction	40
Providing assurance	41
Consumer-facing	42
QR code, mapping and infosheets	43
Consumer-facing reclamation info	44
Mainstream construction case studies	44
Marketing for stakeholder dealers	44
Statistics, and carbon trading	45
Recommended practice	45
The Truly Reclaimed launch process	47

The launch budget	47
Choice of the launch phrase graphics and logo	48
Branding Truly Reclaimed for launch phase	49
Réemploi attesté - French translation proposed	49
The Truly Reclaimed logo	49
EU/UK 'certification' or 'collective' trademark?	50
<b>Definitions</b>	<b>52</b>
<b>Truly Reclaimed scheme</b>	<b>52</b>
<b>Rules</b>	<b>54</b>
<b>WPT1D3.3 Implementation of the TR label</b>	<b>59</b>
Use of the phrase and logo	59
Outline of a transaction step by step	59
Trade or professional registration, and first use	60
A resource for press and media	62
<b>WPLTD2.2 Long term plan for Truly Reclaimed</b>	<b>63</b>
Future synergy ...	63
Building feedback	63
Measuring mass and carbon benefits	64
Attest, certify, verify	65
Chain of custody, provenance	66
Standards of supply	67
Takeback	68
More long term topics	69
Conclusion	73
<b>Target groups</b>	<b>74</b>
<b>Salvo Ltd - terms and disclaimer</b>	<b>75</b>
<b>With thanks to ...</b>	<b>75</b>
<b>Glossary</b>	<b>79</b>
<b>Annex 1 - The Salvo Code</b>	<b>92</b>
<b>Annex 2 - Logos</b>	<b>93</b>
<b>Annex 3 - Lendager: Drivers and ... introduction</b>	<b>94</b>
<b>Annex 4 - Trade stakeholder workshop 2020</b>	<b>95</b>

## Introduction

The reuse of reclaimed building materials uniquely contributes to the modern 'circular economy' objective of significantly reducing carbon emissions<sup>2</sup>, the same goal which motivated a handful of pioneering architectural salvage businesses fifty years ago, and is gradually being adopted by a small but rapidly growing proportion of the 2020s mainstream construction sector. In the 1980s, the trend for using salvage spawned a small cottage-industry in 'get-the-look' reproductions which resulted in the making of fakes that has now ballooned into an industrial-scale intercontinental global trade.

Salvo produced a feasibility report<sup>3</sup> for a Truly Reclaimed label (written by the present author), managed by BRE, funded by Innovate UK and published in 2016 that assessed levels of interest from reclamation dealers, specifying designers, consumers and institutions. The label was approved for stage 2 support by Innovate UK but government budget cuts prevented support funding and Salvo shelved it. Subsequently Rotor kindly invited Salvo to join the Interreg FCRBE project adding the launch of the Truly Reclaimed label as one of its deliverables.

A main aim of this report is a soft beta launch and continuing plan for the future of the Truly Reclaimed label in the Interreg NWE area in 2021. The first group of dealers to use the label, beginning now, will be the members of a code for good practice in stock purchasing of reclaimed building materials and architectural salvage started by Salvo in 1995 and known as the Salvo Code<sup>4</sup>.

The label will be attached to genuinely reclaimed products and batches of materials. At its simplest the label is consumer-facing, informing people about genuine reclamation and reuse and aiming to present an authentic alternative to fake reclaimed lookalikes. To start with it will be seen in stockholder's showrooms and in shops, hotels, restaurants and publicly accessible spaces.

Will the reclamation sector's support for, and implementation of, a verification system be reciprocated by the new 'circular economy' actors and regulatory authorities?

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<sup>2</sup> *'If you had asked anyone ten years ago to build an entire commercial housing project from waste materials, most people would have thought you were delusional and told you to wake up from whatever dream-state you were in. Today – a decade later – we have tested and demonstrated that through innovation and good craftsmanship, yesterday's waste can become new resources, on-par with conventional building products, without compromising on price, quality nor aesthetics. We have also proven that upcycling building materials in new projects significantly reduces carbon footprints – preserving embodied carbon and minimising resource scarcity. Although it is technically feasible to achieve high quality and cost-efficient results - the demand for circular building materials is still low. With this challenge in mind we ask: How do we help circular building materials move from niche to mainstream?' Drivers and demands for circular building materials (Lendager, 2020) See annexe p94*

<sup>3</sup> Thornton Kay and Katherine Adams, Proposed scheme report Truly Reclaimed Wood (BRE, 2016)

<sup>4</sup> see The Salvo Code here <https://www.salvoweb.com/salcoinfo>

Will the Truly Reclaimed label help the linear economy give way to a reuse economy? Will it uprank and recognise the work of the thousands of stockholding reclamation dealers in Europe? Will the millions of tonnes of carbons saved by these stockholders be officially placed on the carbon balance sheet? Will the trade be helped to push reuse up the virtue ladder, above recycling and new material manufacture, and to measure and recompense them – as promised in the reuse hierarchy of the EU in 2008 and ratified in the UK in 2011? Will reuse be mandated as a priority above the continued fossil-fuel extraction of new resources from around the globe? Will governments act to save more by slowing fast demolition and destructive recycling, and turning to a new era of careful dismantling and salvage, the norm a few decades ago? We shall see ...

This study covers four facets of the Truly Reclaimed label. Possibly the most important are that it is consumer-facing and will be put into practice by the stockholding reclamation trade whose input and cooperation are vital for a successful launch. In the longer term, the study looks at ways of incorporating the demands for standards and measurement by mainstream construction and professionals, and connecting to institutions and policymakers to give access to the measurement of the carbon benefit of reuse. The report covers previous and current design, administration, market research and planning, and issues such as provenance, chain of custody, continuity and standards of supply. We suggest alternatives for reclaimed products to the EPDs (environmental product declarations) for new material, and a look into the theoretical meaning of the carbon benefit of reuse.

Salvo will discuss possible ways for the reclamation trade and professionals in the mainstream construction sector to expand the Truly Reclaimed label to offer more than a simple verification that an item is genuinely reclaimed, by transparently detailing the item's entire journey from source to end-use. For reclaimed products that journey may be thousands of miles across continents and across many decades within the reclamation trade, or it may record a simpler switch from demolition to reuse on the same site or another nearby site by an architect, engineer or client.

The Truly Reclaimed label aims to highlight the virtuous reuse of genuine reclaimed products and materials by public-facing companies with higher standards of environmental, social and corporate governance which their shareholders may appreciate hearing about. A label will encourage more reuse by the clients of mainstream construction as a foil to fake reclaimed lookalikes which make people believe that a company is eco-friendly. This is a form of visual greenwash aiming to deceive customers, visitors and employees. Attaching the Truly Reclaimed label will encompass three concepts: that a product was truly reusable, has been truly reclaimed, and will be or has been truly reused.

The report touches on the author's Truly Reclaimed concept dating back to 2012, with reference documents, discussions on batch issues, biophilia, business plan, blockchain, CE mark ecolabel certification and standards, circular economy, contaminants, emission trading



system, EU and UK government policy, FSC, governance, language issues, LCA, legal issues, market research, moisture content, insecticide, stakeholders, sustainable investment, testing, toxicity, trademarks, UN SDGs and weights and measures. It also reports on trade discussions held, and the proposed roll out programme.

The preliminary steps undertaken by the Salvo team comprised of comparing the expectations and objectives of our UK partners in the 2016 BRE Truly Reclaimed report with those of our European partners of the FCRBE project. This would have been simpler but the continuously changing commercial environment with increased sales and sources of stock shrinking, price increases and logistical difficulties due to Covid in 2020 affected stakeholder sentiments which have continued in 2021. These played a part in the underlying big shifts towards 'circular economy thinking' and the dichotomy between 'reuse and recycle' and our own ideas of 'reclamation and reuse'.

The period from 2019-2021 informed the subsequent methodology for the roll out of the TR label starting with simple consumer-facing verification and gradually adding technical stipulations on other aspects of concern to construction professionals.

It was agreed that the launch label would have the following attributes:

- It would verify an item as genuinely reclaimed by the seller;
- It would be simple for reclamation dealers to operate;
- It would provide consumer information about the benefits of reuse;
- It would have a code linking the label to an informative web page.

In the longer term, qualities such as distance travelled from source to yard, chain of custody, performance, continuity of supply, standard of supply, takeback schemes, toxicity and testing would gradually be incorporated.

## Salvo brief history timeline

The following timeline may be helpful to give some perspective on Salvo's activities, which may help to understand the approach taken for Truly Reclaimed.

1991: Salvo was established by the author.

1993-95: The Salvo Code for good practice in stock purchasing to accredit architectural salvage dealers was discussed with a trade committee and historian buildings agencies.

1995 - present: The Salvo Code was launched, and a total of 350 dealers have since been members. The manufacture and marketing of fake reclaimed products gradually increased.

2002: UK government minister recommends that dealers join the Salvo Code.

2006: Salvo calls for 'reuse before recycling' by EU which appeared on national TV

2008: EU rapporteur Caroline Jackson MEP brings in waste hierarchy

2012: A Truly Reclaimed label to promote genuine reclaimed was mooted by the author.

2013: BRE arranged funding for a Truly Reclaimed market report to be undertaken by Salvo.

2013-16: Truly Reclaimed market research across the construction sector yielded a broadly favourable result. A one day workshop included an FSC presentation.

2016: The report was published but launch funding was scrapped due to spending cuts.

2018: Rotor invited Salvo to be a partner in an EU project to encourage more reuse. The launch and a long term plan for a Truly Reclaimed label was a part of FCRBE.

2019-20: Trade discussions were held about implementing the Truly Reclaimed scheme.

2021: The basic label was agreed and the launch process began.

## SalvoWEB

SalvoWEB is the original marketplace for architectural salvage and reclaimed building materials. Everyone from DIYers to dealers, architects and builders can use free tools like demolition and wanted alerts to shop, source and sell through Salvo's established network.

### Our Audience

59,000 registered users

Top 5 countries: UK, US, France, Australia, Ireland

Initially started as a dealer directory, Salvo moved online in 1994

### Active users 2021 - breakdown percentage:

Antique & Reclamation Trade	44%
Professionals, Architects, Designers & Surveyors	16%
DIYers	26%
Builders & Landscapers	9%
Institutional & Charity	2%
Recyclers	2%
Demolition Contractors	1%

## eSalvo

In 1992 Salvo started the SalvoNEWS trade newsletter which moved online as eSalvo in 2008. eSalvo has grown its audience as a trusted source for reclamation and design with 4,780 opt-in subscribers. The user type breakdown is similar to the SalvoWEB registered users above - trade, professional and private consumer subscribers mainly in the UK, USA, Australia and Europe.

## Salvo Code

Since 1995, around 220 mainly stockholding dealers have signed an undertaking to abide by the Salvo Code for good practice in stock purchasing. This was established by a trade

committee between 1993-95 and is administered by Salvo. The Code is a world-leading reclamation assurance scheme that underpins high standards for businesses. We have members across Europe and the USA, but most are UK-based businesses.

The Salvo members have been consulted to canvas opinions on the feasibility and logistics of the Truly Reclaimed scheme through; workshops held in 2015 and 2020, visits by Salvo in person, telephone and online discussions throughout 2019 - 2021.



### The Salvo Code

The Salvo Code is a voluntary code of conduct, subject to peer review, and policed by Salvo Ltd assisted by peer review of Salvo members.

A Salvo Code Dealer undertakes:

- (i) Not to buy any item if there is the slightest suspicion that it may be stolen.
- (ii) Not to buy knowingly any item removed from listed or protected historical buildings or from sites of scheduled monuments without the appropriate legal consent.
- (iii) To record the registration numbers of vehicles belonging to persons unknown to it who offer items for sale, and to ask for proof of identity.
- (iv) Where possible to keep a record of the provenance of an item, including the date of manufacture, from where it came, and any previous owners.
- (v) To the best of its ability and knowledge, to sell materials free from toxic chemicals, excepting those natural to the material, traditional to its historical use, or resulting from atmospheric pollution.
- (vi) Under discussion - a clause about operating the Truly Reclaimed scheme**
- (vii) Not to copy knowingly unique items made or commissioned by other Salvo Code dealers.
- (viii) Where possible, and only within its ability and knowledge, to give customers the choice of buying fairly traded products.
- (ix) To allow its business details to be held on a list of businesses who subscribe to the Salvo Code and to display a copy of the code and this Certificate in a public position within its business premises.

Signed by Thornton Kay, the Salvo Code administrator

The Salvo Code logo is a stylised crane emblematic of vigilance. It is said that the crane sleeps with one eye shut and the other open. In its foot it holds a large stone. If both eyes close it drops the stone which lands on its other foot and awakens it.

## WPT1D3.1 Design and research of Truly Reclaimed

*Description: The preliminary steps. A review of similar labelling schemes has been conducted in order to develop appropriate assessment criteria, graphic design and implementation methodology. The following deliverable is covered by this section:*

### **WPT1D3.1 Design and research Truly Reclaimed**

*This report gives the earlier and later market research, logo examples, workshops and discussions held, decisions taken and why, and raises some questions to which Salvo has given preliminary answers (for example, the French language label 'Réemploi Attesté'). Some decisions may be irrevocable, others more easily changed, and some can be moved to the long term plans.*

## The evolution of a label

When Salvo started in 1991, many in the reclamation and demolition sector were secretive about trade contacts, and unenthusiastic about the publication of the Salvo dealer directory, even though before that consumers had no central source for finding stockholders of architectural salvage and reclaimed building material. Now both reclaimed building material and reclamation stockholders can easily be found online through the internet, but supply chain transparency, of where goods come from and end up, is rarely seen. This in turn means that a vast amount of reclamation and reuse is unrecorded and goes unnoticed.

Dealers traditionally maintain a degree of secrecy over their networks - buyers, sellers, sources and clients - which is a vital part of any dealer system and is generally maintained for commercial reasons. Full public disclosure of sources and prices would disrupt the stockholding dealers modus operandi, which is vital if the reclamation sector is to survive. SalvoNEWS has for 30 years covered stories of deals failing and materials ending in landfill due to mishandling of information. Some upstream suppliers require confidentiality as a condition of sale, especially endowed institutions such as museums, places of spiritual sanctity such as churches, the nobility and royalty who are traditionally cautious about maintaining secrecy, as well as many private clients who wish to maintain their privacy. Downstream end-users are often equally protective of their personal privacy. Commercial buyers usually wish to protect their sources and relationships with members of the reclamation trade who are able to supply the right kinds of material at the right price with the right condition at the right time - no easy task in a world where supplies are tightly constrained.

Regardless of the forgoing, enlightened stockholding dealers recognise that being more open and transparent may help promote the cause of saving more material from demolition, may encourage sales, may stem the rise of fake reclaimed, and may provide more people with knowledge about why reclamation and reuse is good for the planet. So, for stockholders

the Truly Reclaimed label is generally seen as a good idea which they will support provided it is treated sensibly and does not undermine the stockholding dealer network.

In 2012 BRE was working with Salvo on reclamation and reuse, having just completed a survey of the UK salvage trade at the Salvo Fair in 2012, and offered to support a proposal for funding a feasibility study of the author's idea for a Truly Reclaimed label. The Truly Reclaimed scheme was conceived as a warranty made by suppliers that a reclaimed product was genuinely reclaimed and not a newly-made fake lookalike.

The success of the architectural salvage trade in establishing a market in demolition material resulted in manufacturers producing imitations, often labelling them or passing them off, as antique, reclaimed or salvaged, or deliberately obfuscating stocks to buyers. Labels can now be seen in high street stores on, for example, furniture made from teak claimed to be reclaimed which may be artificially distressed new timber, and in builders merchants where new bricks are wrongly labelled as antique or reclaimed, and some are distressed new bricks made to look as if they were reclaimed. To a consumer in a cafe, shop or street, new fake 'reclaimed' bricks look identical to real reclaimed bricks, so the consumer seeing fake reclaimed bricks assumes incorrectly that the material has been reused. Beyond misleading customers with pretend eco-friendliness, the issue is the environmental cost, not simply of the new, but the additional cost of making the new look reclaimed.

When the salvage trade started in the 1970s no deception about the use of the term 'reclaimed' was necessary as the market in reclaimed material was small and there were few specialist reclamation yards. Reclaimed material mainly came from nearby demolitions which were dismantled carefully using hand labour resulting in salvage for resale which was factored into, and reduced the price of demolition.

Demolition became increasingly mechanised, with 'fast demolition' and so-called recycling - downcycling or crushing - taking over from 'slow dismantling' and reuse. In the 1980s and 90s these changes reduced the amount of material being sold to the architectural salvage trade which then looked further afield for reclamation supplies for the market it had created. Nowadays reclaimed bricks may come from China or Brazil while billions of reclaimable bricks from demolitions in Europe are being crushed. At the same time, European manufacturers began supplying new fake reclaimed products using marketing terminology such as 'antique', 'old', 'reclaimed' or 'salvaged' for new products.

Such material is now used to give a mixture of new fake reclaimed and real reclaimed, or increasingly totally ersatz reclaimed interiors of bars, offices, hotels a sheen of eco-friendliness, in effect a form of fraudulent deception to give visitors or employees a belief that an owner is more environmentally-conscious, when at some of the fake reclaimed material may have been, for example, illegally logged, transported to a different country and distressed to look reclaimed by convict or child labour, before being shipped to the West. It

may be that some of those responsible for its eventual use are not even aware of the issues and vagaries of the supply chains.

So in 2012, a warranty made by a supplier that reclaimed materials are genuinely reclaimed was considered a scheme worth pursuing. Salvo started investigating how this could be done in 2014 through government-funded discussions with actors which included other labels, such as FSC, other construction standards agencies, representatives of the demolition sector, architects, consumers and of course, most importantly, the stockholding reclamation dealers themselves.

Reclamation and reuse of reclaimed building material does not appear in UK government statistics. The 2016 Truly Reclaimed report was essentially a market research report, with a draft business case based on the 'Grown in Britain' label sponsored by BRE. It was not until 2019 that Salvo brought the concept of measuring the carbon benefit of reuse to the EU co-funded FCRBE project.

## Truly Reclaimed 2016

A draft Truly Reclaimed mark was produced in 2016 but not finalised. A plan for its implementation was discussed with members of the trade who would implement the scheme and create a system for policing it, with input from Salvo. This changed in 2019 to an assumption that Salvo would regulate it.

The report contained a summary of tasks undertaken, a list of organisations and people who gave opinions in confidence and have not been named, issues raised and how they have, or could be, addressed. The consensus in 2016 was that as the scheme was rolled out, it would be adapted to prevailing thinking and commercial conditions. The 2008 EU Waste Framework Directive and 2011 Waste Regulations were explained.

## Business models

The 2016 research identified the following business models, mainly concerning timber - specialist dealer, runner, small salvage yard, and reclaiming demolition contractor with in-house salvage yard.

### Specialist dealer - dismantler, stockholder, marketer

**Upstream supplies:** Supplies typically start with a call from a demolition contractor, dismantling a large building, who the dealer may deal with directly, or more typically via a dealer chain, the first link of which may be a runner local to the demolition who sells to a local or regional dealer, who in turn sells to other dealers. The specialist reclaimed wood

dealer will buy all, or a large proportion, of suitable wood offered, and will prefer to buy direct from source, and even remove the wood using their own labour to ensure quality control. A dealer will pay good money for the best wood.

**Stockholding:** The wood is batched up and moved to the dealer's store to be cleaned, processed in a kiln or dehumidifier, sawn, stripped, polished and repacked.

**Downstream demand:** The specialist reclaimed wood dealer normally has regular commercial clients for large amounts of wood at high prices. Typically these may be developers or subcontractors to a shop or restaurant chain. Sometimes the dealer has in-house fitters or a team of reliable subcontractors.

**Applicability of the Truly Reclaimed scheme:** HIGH: This was deemed high in 2016 and 2020. The specialist reclaimed wood dealer may find the label important for some commercial clients who may wish to specify 'Truly Reclaimed' timber because the visibility of the scheme increases the number of customers visiting their premises. The QR tag and consumer feedback loop may help both dealers and their clients to better understand how the scheme could work in practice.

## The runner - informs and sells stock to dealers

**Upstream supplies:** Supplies typically start with a call to a demolition contractor or builder, dismantling any size of building which has a small quantity of fairly good quality reclaimed wood, or while driving past a skip. Usually the wood has been removed, not very carefully, from the building by the demolition contractor or builder, and left outside. The runner will procure suitable wood offered at a low price.

**Stockholding:** The wood is sorted and damaged pieces removed. It may then be left outside batched up and moved to the dealers store where it may be cleaned, processed in a kiln or dehumidifier, sawn, stripped, polished and repacked.

**Downstream demand:** The runner normally has various routes for disposal at low prices including small salvage yards, furniture-makers who reuse reclaimed wood, direct sales through an online marketplace such as SalvoWEB, trade fairs, and local builders.

**Applicability of a Truly Reclaimed scheme:** LOW: the opportunistic nature of this business model could reduce the potential to comply with conditions set out in a Truly Reclaimed wood scheme, once developed. It will be necessary to understand how conditions that are likely to be set that could rule out this and other business models from participating in the Truly Reclaimed wood supply chain. Where possible, such constraints should be limited, providing the integrity of the scheme will not be undermined.

## Smaller salvage yard - buyer, stockholder, seller

**Upstream supplies:** Supplies typically start with a call from a local private customer or builder removing a quantity of fairly good quality reclaimed wood. Usually the wood has been removed by a builder, quite often damaging the wood in the process, but it can usually be obtained before being left outside to get wet. The small salvage yard will buy suitable wood offered at a median price.

**Stockholding:** The wood is batched up and moved to the dealers store where it may be cleaned and re-packed. Damaged wood is discarded.

**Downstream demand:** The small salvage yards may upcycle it into furniture, or sell it to DIYers, builders, furniture makers who reuse reclaimed wood, direct sales through an online marketplace such as SalvoWEB and local builders. They will achieve an average to high price.

**Applicability of a Truly Reclaimed Wood Mark:** MEDIUM, the small scale of the operation may mitigate against the financial viability of operating a scheme to include micro businesses. Ideally, cost should not be a barrier to participation, but having robust systems in place, such as third party auditing, is not cheap and would have to be covered by the supplier. In turn, such a supplier would need to be confident these costs would be recouped through higher margins on certified/verified stock. Depending on their client base, this may or may not be possible.

## Reclaiming demolition contractor - stockholder, seller

**Upstream supplies:** Supplies typically start with the demolition contractor's own demolition, and the removal of a large quantity of fairly good quality reclaimed wood, carefully removed by his own workforce, and usually kept dry. The demolition contractor will factor in the value of the wood, usually at a low or very low value.

**Stockholding:** The wood is often batched up and moved to an in-house yard where it may be cleaned and repacked.

**Downstream demand:** The demolition contractor may simply sell, or adopt the small salvage yard approach up-cycling it into furniture, or sell to DIYers, builders, furniture makers who reuse reclaimed wood, direct sales through an online marketplace such as SalvoWEB, and local builders. They will achieve an average to high price.

**Applicability of a Truly Reclaimed Wood Mark:** MEDIUM, though the demolition contractor could find it easier to fulfil any chain of custody/audit trail requirements of a Truly Reclaimed wood scheme. Similar to the small salvage yard business model, it would be highly dependent on the volume of material that could command a higher price due to client requirements. This needs to be better understood through stakeholder discussions.

## Market research, discussions and workshops

### Meetings, events, communications 2015-2021

Salvo held meetings and workshops in 2015-16 which were reported in the original Truly Reclaimed proposal as well as market research between 2019-2021 as part of FCRBE. Salvo contacted stakeholders and reclamation supporters at meetings, trade fairs, visits, via phone calls, emails and requesting that they complete surveys. Generally, the earlier consultations in 2014-16 were for a Truly Reclaimed wood label, and the later ones incorporated other antique, reclaimed and salvaged material, products and building elements. Consumers were considered to be a type of stakeholder.



Three primary groups of stakeholders were consulted:

- Upstream sources - disposers, dismantlers and demolishers of reclaimable building material, some regularly demolish large complexes, then supply dealer stockholders.
- Dealer stockholders - reclaimed building material and architectural salvage dealers who buy upstream, then process, stock, market and sell, to downstream end-reusers.
- Downstream reusers - architects, designers, specifiers, developers, tradespeople, DIYers and end-reusers of architectural antiques, reclamation and modern salvage.

Several market research surveys were undertaken:

- a general online survey in 2016 was circulated to 13,200 people of whom:
  - 600 were dealers
  - 2,200 were designers, specifiers and procurers
  - 300 were in local and central government or trade bodies
  - 10,100 were private consumers

The online survey aimed to persuade dealers in reclaimed wood of the merits of a Truly Reclaimed wood mark. However, the dealers themselves (apart from one social enterprise) appeared to instantly recognise the potential benefits of the mark to their customers, and its persuasive nature to their suppliers.

- a phone and face2face visit survey was undertaken by Salvo in 2019 and 2020
- surveys by Salvo and BRE in 2015 included telephone surveys and face-to-face surveys undertaken in the offices of BRE and Salvo, onsite and at the two events - EcoBuild and the Listed Property Show at Excel and Olympia in London. The results of the survey were positive.

It was assumed that in order to persuade dealers in reclaimed wood of the merits of a Truly Reclaimed label the opinions of those outside the dealing trade would need to be sought and if those outside the inner section of dealers were supportive this would encourage the dealers to adopt the wood mark. In the event, the dealers themselves (apart from one social enterprise) appeared to instantly recognise the potential benefits of the mark to their customers, and its persuasive nature to their suppliers. At a meeting in 2019 FCRBE project partners were asked for their views and any 'red lines'. Salvo created a Debategraph of Truly Reclaimed topics here:

<https://debategraph.org/Stream.aspx?nid=646472&vt=rgraph&dc=all>

Rotor held a trade stakeholder workshop in Grimbergen, Belgium in with a group of long-established reclamation dealer stockholders. Discussions were held between Salvo and a major reclaimed material stockholder in France, and inputs were made from Luxembourg and USA. Face to face talks were also held with Irish dealer stockholders.

Salvo held a Truly Reclaimed trade stakeholder workshop attended by 12 stockholding dealers in Hingham, Norfolk in the evening and following morning of 22/23 February 2020.

*Discussions were held under the Chatham House rule: Comments are anonymised and a list of individual, business and institutional contributors can be found on p74-76.*

## Market research with BRE in 2014 -16

Salvo contacted a number of celebrity, noble, royal and academic supporters of reuse, but all declined to formally endorse the project, although those who replied wished the project well. The was to encourage wavering trade and public supporters to back the scheme. As a substitute the survey carried published comments supporting reuse from well-known personalities including the Prince of Wales and Bill Gates. Salvo found that support for the Truly Reclaimed wood mark was almost universal, with only one trader being neutral on the benefits of a mark. Both trade and private being supportive.

From these surveys it became clear that the importance of the wood mark hinged more on the final consumer's interest in the history of the wood and the environmental benefits of reuse than the methodology of a technical labelling system.

The two dissemination events were held to publicise the mark and gain feedback.

An assessment of the impact of the Truly Reclaimed (TR) wood mark on the amount of reclaimed wood reused in the retail fashion and hospitality sectors proved elusive, although more than one major reclaimed wood dealer felt it would be a good idea. The general consensus was that it would increase awareness of the benefits of genuine reclaimed wood.

It was felt that as a self-funded scheme it was likely to be a slow-burner with the eventual impact taking years to achieve.

The survey showed broad support for the concept of the TR, label strongest from the public and reclamation dealers, with general support from the construction professionals. The least support came from demolition contractors and conservation architects, but even there around half were supportive.

The concept of explaining to visitors about reclaimed material reused within that building seemed to have broad appeal. Sometimes this information is already passed by salvage dealers to their customers, but the information is not then stored with the reclaimed wood for others to see and appreciate, which the TR label and QR code linking to an infosheet would provide.

A takeback scheme at end of current life for reclaimed wood had a mixed result with around 70% positive. Those approving seemed distanced from the practicalities, while people at the coal face felt that a takeback scheme could be difficult to implement. More work needs doing to devise some trial practical takeback schemes to assess their potential.

The larger salvage businesses, who we had initially assumed might be less keen to be involved in TR were generally more enthusiastic than the smaller ones.

Most people surveyed, both private consumers and construction professionals said that reclamation and reuse were very or extremely important. Attitudes appeared to have changed considerably in the past ten years. Again this bodes well for the TR scheme. The main interest in reclaimed wood was price, eco-friendliness and aesthetic appeal. Of least concern were procurement issues, standards of supply and chain of custody. This would seem to indicate that the assurance given by TR that the wood was eco-friendly would be valuable.

There was almost universal approval for the assurance that TR would give that reclaimed wood is genuinely reclaimed and not new wood made to look like old wood. Most surveyed had the view that this was extremely important. Again this supports the concept of TR.

Around 80% of those surveyed thought the TR was definitely a good idea.

*Note: The comment transcripts listed below from pp19-28 have been aggregated and summarised on pp39-46 and pp62-74, and incorporated into the Rules on pp53-58. It was felt important by the author to include these transcripts of source note-form stakeholder comments in different sectors as references for the scheme operators and sector stakeholders. The layout of these comments is follows the supply chain from extraction to reuse - starting with upstream regulators, disposers, demolition, reclamation, stockholding, procurement, design, build, and finishing with consumer endusers. The comments were made between 2015-16, and 2019-21.*

## Upstream, stockholding and downstream stakeholder comments

Generally, most people interviewed and surveyed were in some way involved in the decision-making process to reclaim or not, and many were involved in the physical chain from demolition to practical reuse. Some were reclamation and reuse antagonists, others were outwardly supportive of reclamation and reuse but more enthusiastic about recycling or downcycling, but some were fans of the world of architectural antiques, reclaimed building material or modern demolition salvage.

## Upstream government regulator

In 2016, a senior advisor to the UK government Environment Agency said:

“It is difficult to get a handle on what is happening to wood from construction and demolition. Most is probably recycled, through Refuse Derived Fuel (RDF) or energy recovery. If it is a reusable item, hopefully it won't make it into the waste stream, i.e. it isn't a waste if it is taken out of a building and is usable in its current form (reclamation). Would TR help procurers? Would they pay more for it? What wood products is the mark aimed at? Isn't it obvious that it is reclaimed? Is it trying to fix a problem that exists? It would be nice to have a passport of products for big restoration projects, but how often are they really being sold fake items? There is a common problem throughout construction and demolition waste of what goes into waste facilities and what comes out doesn't match or necessarily tally. This is because of the way that waste is managed and practicalities such as there being no room on site for segregation of materials so they end up in a mixed skip. This then goes to a waste facility where it is weighed as it goes in and consigned as mixed waste. It is then sorted into separate materials which are consigned in bulk loads as those different wastes or even as products. So it is difficult to marry up what has gone in with what has gone out, it is difficult to know if it is correct. If good bits are taken from the waste stream but not consigned out as waste then this leaves holes in the data. Also mis-classifications can cause problems, e.g. soils are often consigned out as a waste but they are often recorded as a product which makes things difficult to compare. Don't see any problem from TR, and EA would favour if it reduces waste. The EA has low risk waste positions. There may already be one which covers reclamation. They definitely have them for the use of construction waste and also furniture and household items. These low risk waste positions state the acceptance of the use of these waste and put requirements around the definition of the waste, its quantity, how long it can be stored for (usually 12 months) and a guarantee that it can be rescued for the same purpose. If one doesn't exist which covers reclamation, then this could be created. End of waste criteria - there is a need to assurance of use. The waste ought not to wait around for more than 12 months to be used. This could pose an issue? There needs to be certainty of market.’

## Upstream disposers of demolition material

Interviews and discussions with upstream disposers, recyclers or reclaimer stakeholders included, for example, public sector agencies which dispose of old buildings including health, education, prison and defence authorities, and 10 commercial developers involved in demolition some of whom had samesite or site2site interests. Practicalities were discussed with trade bodies and Salvo's own demolition members. In 2019 Salvo held face to face meetings, as well as online and phone meetings with trade bodies and professional institutions contacted for feedback, including RIBA, UKCG (construction contractors), Environment Agency, FSC and other relevant bodies.

The comments below are not attributed to individual people, but there is a list of all who kindly contributed at the end of the report, entitled 'With thanks to ...'

'Simple supply and demand. No-one seems to want reclaimed timber for general reuse. Sales are ok if they are oak beams or large section untreated timber that can be cut down for floor boards. With imported or even home fast growth timber so cheaply available the general public are not inclined to buy second hand timber. If there was legislation requiring merchants like B&Q to stock reclaimed timber we might start selling to a wider market, worth a trial! With a general skill shortage, increasing labour costs and health & safety costs, the recovery of timber for relatively small margins is totally uneconomic. On top of this modern timber components use such poor quality material that reuse is not even considered.'

'History was of interest - could add value to reclaimed wood. The majority of wood from demolition is sent for incineration with energy recovery. In the past wood would have been reused or recycled but demolition is now machine-driven. The segregation of wood is time-consuming and there are issues with storage. In principle a takeback scheme is a good idea. However, need to segregate the material on site and deliver. It would be good to encourage suppliers (e.g. B&Q etc) to stock reclaimed material and this would increase the market for it. Reclamation and reuse are very important: adds value to a project. It also improves the 'green' credentials of the demolition industry. Assurance that reclaimed wood was genuine is somewhat important, but TR is definitely a good idea, and would expect to pay more, but TR would not work as part of 'Grown in Britain': This is a standalone scheme which would not link very well with GiB. The reclaimed wood could come from any where. The mark should be Medium to large in a prominent location. Would need to be instantly recognisable. A mark could work for other reclaimed products: Could have an 'approved' logo for sellers of reclaimed material (e.g. like Red Tractor mark). General comments: Reclamation in demolition industry has reduced over the years due to the use of more machinery to carry out demolition. Segregation of materials on site time-consuming. Demolition industry does not always recognise the value of the materials as resource so reclaiming wood not high priority.'

'We dispose of old buildings, a very large company of more than 250 employees, I am neutral about history but think a takeback scheme is a good idea. Reclamation and reuse is extremely important. TR is probably a good idea with the mark in a discrete location.' His anonymous support for TRWM implies a possible willingness for his company to be the originator of the supply chain information flow needed to make first class TR work.

'History is of interest to consumers, a takeback scheme is a good idea. We do not deal in reclaimed or new wood. Reclamation and reuse were very important. Assurance that reclaimed wood is genuine was very important. TR is definitely a good idea. The label should be 20cm square.'

'History of reclaimed wood is very interesting. Like FSC especially for BREEAM. If the principal contractor can look back at where it comes from e.g. wood from within the

company and reused, links to circular economy. Consumers may not be looking for it now, but environmental considerations are coming to the forefront so maybe more so in the future. Most of the wood we take out is mechanically removed or torn out of buildings by machine, it is not really in a form which is suitable for reuse. We segregate wood where possible and where not possible the mixed waste is sorted and wood removed. The wood waste is mainly chipped and used in other wood products. It would be good for these products to be certified. We have looked into removing wood for reuse before, but it is not possible, not economically and there are H&S implications, e.g. denailing of timber. The items we use are mainly temporary wood as they are related to demolition of buildings. So things like site hoarding, shuttering and formwork, which we reuse when we can, especially hoarding. Takeback schemes: yes, always looking for takeback schemes. Procurement teams are always trying to find them, but there are not many. Reclamation and reuse very important. Strive to reuse where we can and where feasible. If it is not too difficult, doesn't cost too much and the item is readily available then they will reclaim. We have a new timber procurement policy which states only FSC is to be used. For them aesthetics is very low priority as it is all temporary uses so aesthetics isn't important. Very important that reclaimed wood is genuine: will get in hot water if it is not genuine when it is thought to be. TR probably a good idea: Will have to be different to FSC but easy to follow like FSC. FSC is on the delivery ticket, on the wood, it is easy to make checks, details are on the website for companies supplying it. For TR it will need to be easily identifiable, easy for checks to be made, and also easy for guys on site to check too. As an environmentalist, I would pay more for TR, but in respect to business, it will depend. We may pay more as long as it is not too much more (maybe 5-10%). It is accepted that they may pay extra for FSC over other timber. Vaguely know about Grown In Britain. They get asked about it for BREEAM, for example, on our Battersea project, we need to show whether it is assured as Grown in Britain and if not we need to find out where it is from. I think TR should be decided based on what the product is being used for. For our current temporary use items, the FSC logo is often quite big on hoarding, e.g. 5cm. However, they then paint over it. Its location/size may be more important for other businesses where the mark may be visible. We only use 2 timber suppliers across the whole of our business. These have gone through a thorough audit trail. How would the purchase of reclaimed wood with a mark work? Would it be purchased from one company or many small ones? We probably wouldn't want to be dealing with lots of small companies. Technically all of our hoarding gets reused onsite as when we are leaving it is usually left for the next contractor but our main other reuse of wood materials would be for boarding up the buildings and covering holes whilst demolishing. This without the hoarding I am told would probably account for 10-20% of wood used on site whereas because the hoarding is such a major contributor to all projects wood use this would be something over 50% if we would class the leaving of hoarding as reusing for next company.'

## Stockholding reclamation dealers - UK & Ireland

In 2016 Salvo found that reclamation trade support for a TR wood label was almost universal, with only one trader being neutral on the benefits of a mark. In 2019 Salvo held

discussions with around 120 major stockholding dealers, some of whom were also demolition contractors and others were manufacturers of products crafted from reclaimed wood. Salvo circulated information about Truly Reclaimed scheme and a questionnaire for feedback to 527 UK salvage yards.

An assessment of the feasibility and impact of the Truly Reclaimed scheme on the amount of reclaimed wood reused in the retail fashion and hospitality sectors proved elusive but the general consensus was that it would increase awareness of the benefits of genuine reclaimed wood. It was felt likely that, as a self-funded scheme, it was likely to be a slow-burner with the eventual impact taking years to achieve.

Comments from reclamation dealers:

South East architectural salvage and decorative antique dealer:

'History of wood is important to me but not customers. A takeback scheme is a good idea. Reclamation and reuse are very important: We try to reuse original material in reclamation, but it can take time to source. I am neutral on TR. A label would not work with other products - an experienced dealer would know. Public should trust dealers, but they need to be honest. Only use reputable dealers. We sell 90% reclaimed wood.'

A major commercial wood reclaimer (annually reclaiming 500m<sup>3</sup>) in the east of England:

'We have annual sales of 500m<sup>3</sup> of reclaimed wood and no sales of new wood other than occasional fallen park trees. Reclamation and reuse is extremely important, as is chain of custody, history and assurance that reclaimed wood is genuinely reclaimed. TR was a good idea for the customer, the size of which should be decided by the designer or specifier. TR would add rigour to upstream procurement, would be good for business collaboration and business coaching, and could provide downstream chain of custody evidence to assure its institutional customers and contractors'

Social enterprise timber reclaimer (19 employees) in Midland

'We save wood scrap, lightly used modern timber salvage, and new offcuts of construction timber. Around 16% is reclaimed and sold for reuse. Reclamation and reuse was extremely important - "it's what we do" - because it costs him between £35 - £85 per tonne to tip unusable wood, of which most is now chipped. When we started clean wood pallets would be taken for no fee, but now we charge £35/tonne. If we can, we sell firewood and kindling rather than pay the gate fees. Chain of custody, history and attractiveness or aesthetic qualities were most important. There was a shortage of aged industrial wood - especially floorboards and cladding - but we never approach demolition contractors or demolition sites because reclaimed wood dealers get there first. It seems to me that a high percentage of salvaged wood now comes from eastern Europe, and it just doesn't travel easily, unless you can persuade your customers to reuse it which is not easy. They want Victorian pine floorboards. We divide customers into two broad categories: the majority want scrap wood

for cheap projects or ones where the wood will quickly become damaged, for example, building stalls in stables - this market is not bothered about provenance or a TR label. A smaller number of regular buyers are craftspeople who reuse reclaimed wood to make new products which are then sold to retailers. That the wood is genuinely reclaimed is extremely important to these craftspeople and some DIYers, but I don't think a TR label would make a lot of difference. I don't like to hear claims about reclaimed wood which are not true, but I'm happy to age newer wood to make it look older. I don't think the customer is too interested in the ageing process, so long as it looks ok.'

Social enterprise timber reclaimers group (28 members):

'Our members mainly deal in scrap wood and leftover new construction timber, with a total throughput in 2015 of 36,600m<sup>3</sup> of reclaimed timber, and 85,400m<sup>3</sup> sold for to be burned for energy. Reclaimed wood is reused for repairing pallets, providing wood for DIYers and building projects, and making wood products. History is important but this is not the principal motivation or reason for reclaiming. History is not important to customers: the idea that is saved from the waste stream is more important; reducing the use of virgin timber and reducing the carbon footprint. Not all pieces have a history that is interesting; not saying that the history should be dismissed, but just that it may not be of a big interest. We sell wood for DIY and building purposes, so these would be in use for perhaps the life of the building. So if it is a product, the life will be the lifespan of that product. For some items such as planters, there will be a much shorter life, whereas other items such as tables etc will have a long life. No to a takeback scheme: Where would you take it back to? We provide a service to the DIY market and also the higher end market of made products. We have a system of recovery to ensure that if wood has further life then it is reused again. Reclamation and reuse is extremely important: We've only got 1 planet, not 3 planets like we are living as if we have. Very important that reclaimed wood is genuinely reclaimed. TR is definitely a good idea. We distinguish products made from recycled materials. The business has environmental and social benefits. The feasibility study for TR wood has had funding and there is probably a larger network of potential users from lots of architectural members which may mean that the scheme will achieve a greater spread more easily than theirs. Doesn't feel that a mark will make much of a difference in the short term. How will the mark work? What if a product is 90% new and 10% truly reclaimed, will it still get the mark? If you are licensing the mark for use you will need to make sure that it is being used in the correct way. Key is the marketing budget to promote it.'

Medium reclaimed wood stockholder craftsman (100m<sup>3</sup> annually) SW England:

'We always specify where timber has come from, any former life, and photos, including of its removal and resawing, and detail such as handmade cutting marks and how it would have been done. We have done takebacks [same-site salvage] in the past, for example, resawing big baulks of timber into planks from Poole harbour to create a new wavescreen. It is fantastic if wood can return to its original location in a new form simply by resizing or cleaning. TR is definitely a good idea. In functions where an old structure is redesigned or



rebuilt you get to keep some of the history of the original form by reinstating some original parts or pieces with their aged patina. This makes a great contrast to new clean lines of a rebuild. Some of our new and reclaimed timber is given a reclaimed look. Reclamation and reuse is extremely important. Eco-friendliness and assurance that reclaimed wood is genuinely reclaimed is important. The size of the label should be decided by the designer or specifier.'

Scottish reclaimed wood dealer stockholder (100m3 annually):

'We always give the history of where the wood came from. A takeback scheme is a good idea. Reclamation and reuse is extremely important, assurance that reclaimed wood is genuinely reclaimed is extremely important. TR is definitely a good idea, the size of which should be decided by the designer or specifier. Perhaps clients who used reclaimed wood could be given a reminder, possibly a document that authenticates the items bought and states: *Please reuse should the building plan change at a later date.*'

Major home counties reclamation dealer:

'Reclamation and reuse is extremely important, and assurance that reclaimed wood is genuinely reclaimed TR label is a good idea. Takeback scheme might work but business incentive has to be carefully geared and the stamp on the wood might need to be place on a register run by Salvo. History is important because it gives an idea about how wood was logged and milled, and the ability of the craftspeople at the time it was installed. I discuss provenance with customers explaining how certain wood was used in particular ways - for example radial cuts for flooring and cross cuts for figure. Customers are interested in provenance and authenticity, and sometimes seek wood for nostalgic reasons - for example when I had a thousand square metres of flooring from the old Commonwealth Institute which Londoners visited in the 1950s and 60s on school trips to see products from Commonwealth countries. The same thing also happened with Seaboard Lumber cladding from Canada. Around half my supplies came from demolition companies, and half from buildings where I organise the strip-out using my own teams. We have no special tools for removing flooring, mainly use mattocks. It is hard work, but one of my best floor-lifters is 65 years old. Reclamation and reuse are extremely important but I would like the TR label to differentiate on the basis of distance travelled. Wood reclaimed from UK sites is better quality than wood reclaimed from other countries such as, for example, Romania and other east European regions, or even China, which may also encourage the movement of foreign bugs to Britain. I do not normally try to make reclaimed timber look more reclaimed, but when resawing softwood beams into planks for flooring or cladding I half plane the saw cut marks so that saw marks still appear and the wood looks more rustic or reclaimed than if it was close-planed all round, which tends to make it appear as it it was new wood. I would be prepared to use TR but it would need careful policing to avoid it being abused by dealers using the mark incorrectly or fraudulently. The economics of the trade in reclaimed wood over the years has meant that the market in domestic wood increased and the upstream source, particularly demolition contractors, increase the amount charged to the trade in a bid to constantly squeeze out the profit. As prices increase this creates new pressures from

foreign sources which come from countries with much cheaper cost bases that can absorb transport costs and still sell to dealers at lower costs than those being offered from UK demolition sites. I'm prepared to accept the TR scheme covering imported reclaimed wood provided it was properly marked and policed. Demolition contractors tell me that they are pressured to agree contracts which do not allow time to carefully reclaim old wood. If the demolition contractor finishes three weeks early he gets a big bonus, but if he finishes three weeks late he receives a big penalty. The penalties far outweigh the relatively small amounts the demolition contractors receive for reclaimed wood. The government should enforce the 2011 Waste Regulations to prevent demolition contracts being let without sufficient time for reclamation and reuse - which is the law. Thornton Kay from Salvo spoke to the Environment Agency about this issue in 2014 and 2015. He was told that the EA would take action against any infringement of the waste hierarchy (which requires reuse before recycling or energy from waste). A lot of demolition wood is now being stripped out and damaged by machines and then sold by the container-load to dealers. It is not clear where this timber is going. It might, for example, be sent to China, where demand exists for reclaimed wood to manufacture reclaimed wood furniture which is then imported back into Europe. Unless the demolition contractor knows the eventual purpose to which the reclaimed wood will be used he cannot know whether reusable wood is being reclaimed, recycled or used as RDF. So he cannot know whether the 2011 Waste Regs have been complied with. Health and safety in the demolition industry has moved away manpower towards machinery for demolition, and because most reclaiming of wood is done by hand it is increasingly frowned on by demolition. I've not heard of any deaths reported while timber is being reclaimed by hand in London.'

Large Yorkshire salvage dealer:

'Reclamation and reuse is extremely important, assurance that reclaimed wood is genuinely reclaimed as very important, and TR is definitely is probably a good idea. We would like to be involved in a takeback scheme.

A single smaller dealer southern England:

'History was not of interest, I'm neutral on a takeback scheme, reclamation and reuse was extremely important, TR was definitely a good idea, with the size of the label optional to be decided by designer.'

## Stockholding reclamation dealers - Belgium

Issues discussed in an Opalis study day in Grimbergen included:

- proof of origin - in effect, chain of custody from demolition plus origination of material prior to first use. For reclaimed setts this might mean proof of ownership from the chain of dismantling to dealer, plus some kind of geomorphological match to one of 100 granite quarries in Sweden 100 years ago;
- increasing demands - there are increasing provenance demands placed on the reuse of reclaimed material in major projects. It was stated at the study day that this was

unrealistic when, for example, batches of similar materials are mixed and sold as one product to end-users;

- own label designed for reclamation - could expectations of mainstream construction be met with a purpose built label? The TR label is starting as a consumer-facing assurance not a technical panacea. It may be that once a labelling system gets underway, with a trade regulatory committee, the longer term aim of Salvo for a 'Reclaimed Product Declaration' could satisfy some of these expectations.
- unfair competition - from fake businesses (schijnzelfstandigen - bogus self-employed people) - presumably not paying social costs and taxes and undercutting the established market?
- unfair fakes - unfair competition from manufacturers naming new lookalikes as reclaimed, for example 'Boomse Recup' ('Reclaimed' Pantiles) from Wienerberger;
- standards of supply - building developments are being undertaken by ever larger companies who are homogenising the materials, encouraged by major manufacturers, to eliminate non-certificated products such as reclamation. Of course, such standardisation and elimination the old comes at a cost - increasing carbonisation and climate change, while reclamation and reuse reduce climate change and save the planet. Consumer-facing TR may help redress the balance. Consumers understand the issues and increasingly mistrust the greenwash of large corporations.

The attendees felt that a label needs to have certain attributes which allow trusted dealers to self-certify quality, and that the reclaimed material

- has not been stolen (or removed from protected buildings without consent?)
- has been uplifted or dismantled correctly
- has a defined system for sorting, processing, packaging and storing
- is sold by professional dealers with National Social Security Office numbers

Rotor wrote that the label could be organised in two ways:

- organised collectively by a group of dealers using a 'collective' trademark with no external control and no certification

or

- regulated by a third party (must not be a reclamation dealer) which consults a trade committee, and would then be eligible for a strong 'certification' trademark for its label

*Salvo Ltd, which does not deal in reclamation, applied for a certification trademark for the Truly Reclaimed scheme in UK in 2021. A will apply to the EU in 2022.*

## Stockholding reclamation dealers - France

Major reclamation dealer France

'The history of reclaimed products is important. Regarding takeback schemes: France has a communal depot for recycling. May have happened within cobblestones. Reclamation and reuse are extremely important, as is reclaimed wood being genuinely reclaimed. Definitely think TR is a good idea, would maybe pay a little more. Sales are mainly reclaimed, with some new. Modern salvage of boards from railway goods wagons.'

## Stockholding reclamation dealer - USA

Major USA dealer/deconstructor/specifier and reuse consultant:

'History important - I pass the story on to my buyers, whether they are buyers of raw reclaimed wood or wood furniture we have created. I'm neutral on takeback. Yes, if the wood returns in similar good shape as when it was sold. No, if the wood was glued down or damaged during this particular use. Assurance that reclaimed wood is genuinely reclaimed is extremely important. TR is probably a good idea, with optional label size and location decided by designer.'

## Downstream architects, clients, end-users

Discussions were held with those that would potentially work with reclaimed wood – largely fit-out contractors.

A major developer wrote:

'History of the wood was important and would be of interest in terms of a managing risk. We would need confirmation of the source of the wood in order to ensure it would meet environmental requirements and not have a negative impact on our reputation. We carry out refurbishment of heritage buildings and materials are recorded and managed carefully. In employers requirements, there is a requirement to 'reuse where possible'. No detailed information about wood specifically. Don't know how long wood stays in use as this would vary depending on the materials used. There is reuse of some materials e.g. temporary hoardings which may only be in use for a few months. But other elements e.g. kitchens in homes have a 10 year design life. A takeback scheme is a good idea This may be difficult for contractors as the contractor removing the wood could be different from those who installed it. There would be a requirement for information sharing and this may be difficult. Reclamation and reuse are very important. This is increasingly important especially in terms of the embodied carbon of materials and the increasing requirements of BREEAM. This depends on the use of the material and the user. The ease of procurement and security of supply is a big issue so that a client can specify material and it will be available. The aesthetic qualities will be key for some users e.g. kitchen, flooring but where the material is hidden not

important. Criteria for new wood depends on the use of the material and the user. Chain of custody is a priority with ease of procurement, price and aesthetic qualities second. The ease of procurement and security of supply is a big issue so that a client can specify material and it will be available. The aesthetic qualities will be key for some users e.g. kitchen, flooring but where the material is hidden not important. No current specifications for reclaimed wood. Have a sustainability strategy and a code of construction practice in place but working on producing a 'crib sheet' for contractors summarising the issues to be considered. Very important that reclaimed wood is genuine. Important to make sure that timber is actually 'reclaimed' and is not new wood and supplier is calling it reclaimed as 'cover' that it does not have chain of custody certification. TR scheme probably a good idea. Only hesitation is whether those carrying out the reclamation are in a position to do this process. 1. Don't want to shut out 'artisan' workers who cannot afford the additional expense/time required. 2. this is probably most relevant to retail sector and the issue is predominantly cost. It could be useful to them but they may not necessarily be checking. Neutral on paying more for TR. Depends how much more and also the volume required and its use. For example in uses where material hidden (partition walls) would probably not pay a premium but in visible parts more likely. Where should the TR label appear? Depends how much more and also the volume required and its use.'

A major developer/contractor (£1.3b t/o) wrote:

'We are interested in the history of reclaimed wood: Would be good to know where timber comes from, useful for all timber as often now known with FSC and PEFC timber. The story can be a powerful and useful marketing tool and is of interest to customers but depends on the client. Some clients specify 'legal and sustainable' but rarely asked to provide reclaimed. Where buildings to be demolished, responsibility given to demolition contractor to be sorted. Anything with reclamation value is likely to be removed and sold on (e.g. hardwood flooring is generally well done) but otherwise anything with calorific value is incinerated. For construction sites, waste timber is collected by Community Wood recycling where possible or managed by waste management contractor. Length of time products in use depends on use. Structural timbers typically for life of building (60 years+). Internal joinery, e.g. doors etc 20-30 years and external joinery (e.g. windows) typically shorter and these generally rot so are not always suitable for reuse. Regarding takeback: No. 'Take back' is wrong terminology as these schemes in construction typically involve the material being taken back by the original supplier (e.g. Knauf insulation, British Gypsum plasterboard etc). For new construction, timber should not be over ordered so only timber 'waste' is offcuts which can be suitable for reuse. However, when it leaves site it is then usually 'waste' and does not have CoC. Also, some clients do not want any secondhand material. Price is important for reclaimed materials: Price: usually there is a premium for reclaimed materials. For this to work at scale it would need to be cheaper and clients would not expect to pay a premium. Ease of procurement: Very important for contractor. Material with correct performance requirement (e.g. species, stress grading etc) needs to be available at right time. Timescales often short to source materials and have them delivered to site in time for building

programme to avoid costly time penalties. So, usually new is better as it can be produced as required in volumes needed. (This is also a problem for homegrown suppliers as do not have sufficient stock). We reuse reclaimed where required by client. Usually just materials for temporary use e.g. scaffold planks and hoardings. One example where tender had requirement for 'hardwood reclaimed floor' but no further details. Found difficult to source. It is very important to have procedure to confirm that material is recycled. For the FSC and PEFC recycled label there is a lot of work involved. Also, example of Knauf bioboard made from recycled newspaper - to prove this is quite challenging. TR definitely a good idea: Need to bring circular economy thinking into it rather than just a focus on responsible sourcing. Need to robustly confirm that material is reclaimed. Also, what material would this apply to e.g. would timber offcuts be reclaimed or does it have to have been fixed in the building? Also, need to consider waste regulations. Timber offcuts on construction sites are considered to be waste whereas timber offcuts in timber industry are co-products. No premium paid: For this to work at scale the price would have to be cheaper. Beyond the scope of GiB. This aims to raise awareness of British woods and bring more woods into management. There is already a GiB recycled content scheme which has a requirement for minimum 30% virgin GiB element and rest post-consumer timber. Could put proposal to GiB board but likely that funds not available to proceed with this. Visibility is important for TR. It could be stamped on products in same way as FSC is. However, always needs to be a paper trail for auditing (internally and externally) in same way as GiB or FSC. There needs to be a claim on the delivery ticket which can be looked at on the website. Suggest this is quite 'niche' as reclamation takes up space and there are issues with transportation and logistics. Under other comments: There is an issue with the Government definition of 'legal and sustainable' as it only includes reclaimed material (abandoned or confiscated) if more than 10 years old and evidence is required. How will this link with BREEAM? BREEAM will be a driver for this but only deals with responsible sourcing whereas the focus should be on circular economy. UKCG disagree with BREEAM on way responsible sourcing managed. BREEAM requirements very different to FSC and PEFC and to UK government 'legal and sustainable'. TTF and WWF had a workshop. TTF may have been able to fund something for timber but not interested in palm oil which CPET also currently cover. For demolition if a material has a value it will be removed and reclaimed but timber struggles if it does not have an aesthetic value. For example, painted timbers/door frames - is it treated or stress graded. Need to consider this in light of circular economy and not responsible sourcing. UK Green Building Council LOOP project aimed to look at buildings as a valuable resource. Needs to be straightforward and need a robust way of demonstrating where timber comes from.'

A leading construction company (more than 250 employees):

'It depends on the customer! If it is private sector and a kind of project where they are specifying use of reclaimed then yes, they will be interested. If it is on a standard job then the client will not be interested, few aspirations related to reclaimed. Imagine old wood removed is burnt for energy recovery or landfilled. It will depend on the location and the services available there. Length of time before material is removed depends on the use e.g.

fixtures & fittings vs structural. Wood has great longevity if you want. In a school would be looking for timber to last 20-30 years. A takeback scheme is a good idea. Ties in to the circular economy. However, it depends on quality and design of element/material/product, is it designed for its intended new life? Information provided with it, the contract in place. Example of circular building in the Netherlands: structural glulam beams - had an agreement with manufacturer or supplier to buy them back after 20 years. However in order for this to work, the supplier suggested sizing for uses which would be more saleable in the future. The product has a material passport which includes information for intended second life. Have been working with a university looking at how door frames can be taken out and reused. Reclamation and reuse are currently somewhat important but in future would be very. Chain of custody has been in place for a long time. We challenge designers and clients who don't specify chain of custody. It is very important that reclaimed wood is genuine. If the intention is to reduce the impact of a building then it is important. However, if just need to get some wood and get reclaimed, it is not so important. TR is probably a good idea: Depends on how much it costs. How prohibitive is getting the mark? A mark would raise the awareness of unmarked reclaimed timber. New wood has to have chain of custody. Authenticity - don't have this at the moment unless taken out themselves. There can often be procurement issues e.g. sourcing enough structural timber elements. Aesthetics are important for exposed items. Would pay more for TR wood. It was accepted that FSC/PFC was more expensive in the earlier days. However, commercial teams may see it differently, as their job is all about least cost. Want the mark fairly discrete. The history angle doesn't need to be linked to the material. Don't see FSC/PFC emblazoned on finished timber, see it on the raw products. Other comments are: The issue is high level, the use of reclaimed wood is not a current issue. They wouldn't necessarily have a problem using reclaimed, but it wouldn't be suitable for some projects. Can't see any downsides to a scheme. How visible is the market? Would a TR label kickstart more visibility around reclaimed wood as a source? The first thing that comes to mind is - does the decline in the reclaimed wood market marry well with an increase in sustainably certified products? There is a need to demonstrate the source. Timber could be badged as reclaimed but is in fact from an illegal source. Even if the wood was from an illegal source in a previous life, reclaiming it for reuse is better than sending for energy recovery or landfill.'

A leading contractor group wrote:

'History of reclaimed wood was not needed. Another layer of paperwork/admin in a saturated market? From an antique point of view, if something has a provenance it may be worth more so may be more useful in this instance. When reclaimed wood is no longer needed most is either chipped or sent for energy recovery. Some companies use grade A timber for OSB, kitchen worktops etc. Other low grade uses may be chippings for garden mulch etc. Neutral on a takeback - difficult to get a takeback scheme to work - eg reuse of pallets. Not economically viable, may be H&S or fire risks, eg number of pallets that can be stacked on site and fire risks. Reclamation and reuse were "Not so" important for industry. They have one refurbishment job which is putting down reclaimed flooring but this is an

exception. Personally, the answer would be "very". Reclaimed wood must be fit for purpose - right timber for the job, durable and reusable workable sandable. The aesthetics are down to the architect. They can be fussy e.g. don't like knotty wood, certain colours/grains etc. Can be a pain. The third rank was Chain of custody and history. It is rare that they reuse anything unless it is a refurbishment job which specifies this. Rest of the time brand new timber is used, with the exception of furniture. Very important that reclaimed wood is genuine for BREEAM. Important that any scheme is not as complicated as Chain of Custody. Probably no to TR. Difficult to implement done all the time, ie this is your business. Very difficult to get demolition contractors to do a decent demolition audit let alone anything else. Demolition contractors may reuse timber or other items, but they don't tell the building contractor about it. So very rarely do they find out what happened to materials in a building being demolished. I feel that it would be very difficult to put requirements on the demolition contractor for such a scheme. Clients wouldn't pay more. People expect to pay less for reused unless it is a very rare timber or something with a specific value such as a fireplace. No to GIB. There is already a market that does reclaimed and it could be useful to them. 98% new timber used. There is a lack of time to source reclaimed and enough of the product you need. If you went to a timber supplier and they gave you the option of "you can have this new timber or this reclaimed timber" and you can get it off the shelf and it comes when you want it and meets the specification then it may be different. Client's will want to know "is it as good if it is second hand?" Clients don't necessarily trust it, does it have the same shelf life? What is the incentive for demolition contractors? Their costs are coming in at 20% higher than the price their clients want to pay anyway, so there is a need to strip costs to a bare minimum. Clients will not want to pay any more.'

A large city council (more than 250 employees) said:

'History was important (but 'suspected this depends on the history - association with significant events or people would be of particular interest') was keen on a takeback scheme for wood being removed from projects and for inclusion in specification for future projects. Buys more than 110m3 annually. Reclamation and reuse very important, extremely important that reclaimed wood is genuinely reclaimed, think TR definitely a good idea, and would put it in a prominent location. It needs to be standardised so becomes recognisable like the FSC logo. Buys less than 10m3 annually. We tend to focus on buying legal and sustainably managed (FSC, PEFC) because there is a reliable supply. Very supportive of reclaimed because it is probably the best environmental solution but don't have a specific policy on using reclaimed due to limited availability. Don't have the capacity within the council to take wood from our demolition and refurb works to then sort and store for reuse in our building projects. Would like to do this but don't see it as our role. Need private suppliers to do this. At the moment the waste wood generated is left with the building/demolition contractor who will probably adopt the most cost-effective solution to disposal, recycling or reuse.'



A SW England architect:

'It would be interesting to know moisture content and insect infestation. History - authentic species. But - control of quality supplier - representative sample = arguments. Important if trying to achieve old look. Eco-friendliness and sustainability gives good advantage. Price: may have to pay a bit more. All other options are important too. Currently specifies reclaimed wood for flooring or beams. TR probably a good idea If it provides reassurance of quality. Would pay more: Yes, provided its not for a silly amount (e.g. 10% reclaimed). Also reassurance it hasn't been ripped out of a perfectly good bar. No to TR part of GIB: too complicated. Reclaimed wood is 10% of the total specified.'

Conservation architect:

'A takeback scheme was a good idea, that reclamation and reuse were extremely important, currently specified reclaimed flooring, cladding, furniture. It is important that reclaimed wood is genuinely reclaimed, and TR is probably a good idea, assured. No to branding. Specifies 50% reclaimed wood.

Leading architect (top ten UK, top 100 global):

'Takeback scheme a good idea: Part of a cooperative - come and collect. Reclamation and reuse were extremely important part of the business. Very important that reclaimed wood was genuine: Ensure like for like. Building regulations. Confident - reputation-conscious. Specifies 60% reclaimed wood.'

Small London architects:

'History of reclaimed wood was important, thought a takeback scheme a good idea: Knowing where they come from - audit trail. Thought reclamation and reuse were somewhat important: Lots of conservation projects don't like reuse as it may come from a listed property. Currently specifies reclaimed wood for domestic flooring. Very important that reclaimed wood is genuinely reclaimed, and definitely thinks a TR a good idea To prove that it is reclaimed wood but not sure if client would pay more. Maybe specifies around 10% reclaimed wood.'

South East England architects practice:

History of reclaimed wood was not critical but good to know, thought a takeback scheme a good idea, said reclamation and reuse was very important, often looking for reclaimed timber, specifies reclaimed for oak frame piecing-in, very important to know that reclaimed wood is genuinely reclaimed: Important to know it will perform and that it is dried. Thought a TR probably a good idea, and thought TR could work as part of GIB. Specifies maybe 20 beams a year. Other comments: Issue with the source - can't get it when needed. Lag between design and procurement. Need section sizes.'

South East England architects practice:

'Reuse of reclaimed was client-led, reclamation and somewhat important, specifies reclaimed wood for flooring, not so important that reclaimed is genuinely reclaimed: The look and price are more important (historic not an issue). Is neutral on TR and paying for it. Specifies around 50m2 reclaimed a year, and does not buy distressed wood: better to buy reclaimed.'

East England architects practice:

'History of reclaimed wood was important, a takeback scheme was a new and good idea. We try to store and reuse. Reclamation and reuse were somewhat important: We mostly use green oak which is cut to size. Philosophically, how good is reuse? We should not pull buildings down to get the material. Said it was extremely important that reclaimed wood was genuine, and that TR was definitely a good idea and clients would probably pay more. Other comments: Floorboards need to be de-nailed - clients would buy, but we would need to charge extra. Handling reclaimed, but reclaimed within project.'

## Consumers, visitors and private individuals

During the course of the 2016 project it became clear from the surveys that the importance of the wood mark hinged more on the final consumer's interest in the history of the reclaimed wood than on the credibility of a technical label covering topics such as standards of supply.

A London specifier and building owner:

'History was of interest to visiting customers, was neutral on a takeback scheme. Great idea but tricky to manage, though it is along the lines of returning bottles after use but on a larger scale. There does need to be an incentive so it does not end up on fires. I buy less than 10cum of new and reclaimed wood annually, but said that reclamation and reuse were extremely important, that reclaimed wood being genuine was extremely important, that TR was definitely a good idea, and the label should be small in size.'

UK two private male consumers:

'Reclamation and reuse is extremely important, thought that history of reclaimed wood is of interest to consumers, that a take back scheme is a good idea, and TR is definitely a good idea, with optional size decided by designer or 30cm sq.'

UK private male consumer:

'Neutral about the history of reclaimed wood being of interest to consumers but thought a takeback scheme a good idea, felt that reclamation and reuse is extremely important, and a TR label is definitely a good idea, with optional size decided by designer.'

UK private male consumer and enthusiast:

'The history of reclaimed wood is of interest to consumers and a takeback scheme is a good idea, felt that reclamation and reuse is extremely important, and a TR label probably a good idea, with small size.'

UK private male consumer:

'Neutral on interest in the history of wood and a takeback scheme, rated reclamation and reuse as very important, thought assurance that reclaimed wood was genuine as very important, that TR was definitely a good idea, and small in size was best.'

UK 13 private female consumers:

'Reclamation and reuse is very or extremely important (two said somewhat important), wanted assurance that reclaimed wood is genuinely reclaimed, thought that history of reclaimed wood is of interest to consumers, and a TR label is probably or definitely a good idea, with optional size decided by designer or small size.'

New Zealand female specifier and customer:

'History was of interest to customers, that a takeback scheme was a good idea, did not deal in any reclaimed or new wood, said that reclamation and reuse was extremely important, that assurance that reclaimed wood is genuine was extremely important, that TR label is definitely a good idea, that it should be 10cm square in multiple locations.'

## Celebrity supporters of reclamation and reuse

Some time was spent approaching a number of celebrity, noble, royal, intellectual and academic known supporters of reuse, but all declined to give written support to a Truly Reclaimed label although those who replied (including the Prince of Wales and Ellen MacArthur) wished the project well. The aim of celebrity reuse support was to encourage wavering trade and public supporters to back the scheme. As a substitute, the survey carried published public comments supporting reuse from the Prince of Wales and Bill Gates.

## Institutions, consultants and trade bodies

A major UK conservation body wrote:

'The history of reclaimed wood was important: Encourage to keep material in location [samesite reuse]. Should reuse old timber because it's a good material. Ensure it is salvaged in property - provenance is important e.g. scrap metal. Medieval age timber upwards can survive for hundreds of years. Takeback scheme is a good idea. Said it is very important that reclaimed wood is genuinely reclaimed: Important so that people are not misled and end up paying for things that are not true. Thinks a TR scheme is probably a good idea: Helpful for telling what is genuine. Need to consider the practicalities of use. Would not pay more: Should be a necessity, not a luxury. Was neutral on mark working on other reclaimed

products: Variable - so long as it doesn't damage the brick. Important to consider appropriate quality and risk of contaminants.'

A major UK timber trade body wrote:

'What wood products is the mark aimed at? Construction products or furniture? Is it for like for like use of the product? Where is it aimed at? Europe or wider? Under regulatory requirements, reclaimed and recycled timber is exempt. A mark could potentially be useful. In furniture and paper there is quite a demand, but this is often associated with imported products, e.g. teak.'

A UK retail trade body (500 members) wrote:

'History was not of interest to members but for materials arising from a fit-out, the SKA rating scheme encourages reuse as a first option, with the next option avoidance of landfill, which is usually energy recovery. Average life of a scheme is 10 years before removal, so a takeback scheme is a good idea so anything to extend the life of a product is a good idea. Reclamation and reuse are extremely important, but not for our members where economics drives the business, sustainability is not important, they are only interested if it will win them more business or if it saves them money. Assurance that reclaimed wood is genuine is not so important - members will know if it is reclaimed or not. New wood make to look like old will look, smell and feel different. TR is definitely not a good idea. You tend to know when it is reclaimed or not, a mark is not necessary. Having a warranty relating to the product is the only benefit of having a mark. Designers have a responsibility to ensure that products meet building standards and are fit for purpose. If it is a branded product bonded to a substrate e.g. timber flooring, then it may be of added value. Access floors - wood wrapped in steel, currently has a high waste factor. The adhesive from the carpet means the entire thing gets scrapped. We are working on ways of addressing this, e.g. carpet stuck to each other rather than floor would mean it could be reused. Warranties are important, e.g. carpet tiles for reuse. Kingspan has introduced a reuse scheme which has taken a long time to come about. Contact the chair of Ska rating technical committee. Will it be extended to board products - this is where there may be an opportunity, for the repurposing of furniture. In Ska, see D20 Timber, this says 100% of timber used is from, number one in the list is reclaimed. Usually know if wood is reclaimed. There are cost, storage and warranty issues related to a possible TR scheme. Is it a pull from the market for TR or a push from trade association?'

A major environmental building group wrote:

'How TR will fit in with the existing timber certification schemes that include recycled wood, eg. FSC and PEFC? The TRW mark could be of relevance to various parts of BREEAM schemes. For example, NC 2014 it could be relevant to MAT06 material efficiency, WST01 reuse and recycling and MAT03 responsible sourcing. If the TRW mark were to be used to report on responsible sourcing (MAT03) it would need to be assessed in the same way as any other responsible sourcing scheme. For example FSC and PEFC currently have been scored at 6/10

using the BREEAM criteria. Anecdotal evidence that the aesthetics of the timber is more important to users than the source/history of the material.'

A building consultant wrote:

'I am neutral on the history of reclaimed wood, but might be interested to know if it is being reused from the UK rather than another country. Not necessarily important to know the exact location it came from and its previous use. It is important to be thinking of the circular economy. There is a lot of potential for reuse of structural timbers for example. We need to consider how to specify structural timber; working towards standardised dimensions for structural timber elements (e.g. glulam) similar to how there are standardised dimensions for structural steel. This would make it easier to reuse the wood multiple times as there would be standard structural calculations to work to. Reclamation and reuse are between very and extremely important. Need to reuse more not just recycle. When considering reclaimed wood suitability for purpose and chain of custody were most important. Where does it come from? Should be from a non-controversial source. I want assurance that reclaimed wood was genuine. TR is probably a good idea: Concern over how it would be implemented. It costs money to run such a scheme, would this additional cost on the wood place it out of the market (i.e. make it too expensive)? When would the label be required? If it is only required when the wood is changing hands (bought/sold) this may be good. But if it would need to be placed on wood being removed from a demolition site and reused in new construction on that site it may be prohibitive to its use. The user may then decide to buy new instead of reusing. It can't work as part of Grown in Britain as you are never going to know where the wood originated from. It could be reclaimed from a building in the UK but originally came from another country. GIB has a standard relating to chipboard which states that only the virgin element is from the UK but that the recycled content is classed as coming from other sources as it is not possible to state they are from UK only. Putting a mark on the timber may not be possible, especially if it is being used for visually graded wood. Putting it on structural timber would be more suitable as all softwood is already marked with other things. So markings on structural timber could be prominent. As a minimum would need some form of Chain of Custody on the delivery ticket. The key outcome of any mark would be to confirm the product meets the user's requirements or meets a standard. Would need to be very careful to which products it is applied so it doesn't dissuade people from using it. There may be some cost for testing but the cost of the reclaimed product would still need to be cheaper than buying new. Could definitely be suitable for structural steel but not for bricks. Association of Sustainable Building Products (ASBP) are currently undertaking an Innovate UK project on steel reuse, so it may be worth seeing what they are doing. Would it put community reuse schemes out of business?'

A USA reuse educator:

'History was of interest to customers, a takeback scheme was a good idea, did not deal in any reclaimed or new wood, reclamation and reuse was extremely important, assurance that reclaimed wood is genuine was extremely important, that TR is definitely a good idea, that the label should be 20cm square.'

A USA academic educator, deconstructor, specifier, customer:

'History was important to customers, a takeback scheme is a good idea, did less than 10cum reclaimed wood annually, said that reclamation and reuse is extremely important, that assurance reclaimed wood was genuine is extremely important, that TR mark was definitely a good idea and should be small in size.'

## How to increase carbon emissions

Table: A meta-survey of UK reclaimed timber reclamation and reuse 1998-2021

1998	Salvo	BigREc1	3,800,000	m3	3,610,000	tCO2e
2007	Salvo	BigREc2	1,900,000	m3	1,805,000	tCO2e
2011	WRAP	report	1,200,000	m3	1,140,000	tCO2e
2012	BRE	MiniRec	200,000	m3	190,000	tCO2e
2014	UK Forestry	imports	6,400,000	m3	6,080,000	tCO2e
2014	UK Forestry	domestic	3,800,000	m3	3,610,000	tCO2e
2015	National CWRP		37,000	m3	35,150	tCO2e
2015	Furniture Rec Net		100,000	m3	95,000	tCO2e
2020	Reuse Network		128,000	m3	121,600	tCO2e
2020	**Salvo	FCRBE	120,000	m3	114,000	tCO2e

- Approximately 3.6mtCO2e of embodied energy was saved for reuse by UK reclaimed wood sector in 1998, compared to an estimated 0.1mtCO2e in 2020.
- Between 1835-1935 the UK imported over 50% of the world's timber exports.
- Reclaimed wood stocks do not appear in the UK government ONS, nor EU, wood statistics.
- \*\* 2020 Salvo BigRec3 120,000 m3 - this figure is a provisional result, TBC in 2022.

The table shows a collapse of the 1990s world-beating UK reclaimed wood sector after policies shifted in the mid-1990s from salvage and reuse to encouraging recycling. First class, first growth forest timbers imported into Britain between 1835 and 1935 were taken out of the reclamation and reuse sector and into the waste sector. The best of the world's timbers were imported into Britain during that period. The pink sectors show new timbers. Around

25,000 tonnes of timber was (and still is) demolished each working day of which around 2,500 tonnes per day is reclaimable tropical hardwood.

The phrase 'recycle and reuse' should not be used in any policy document because 98% of demolition timber is 'recycled' and only 2% is reclaimed. The phrase 'reuse and recycle' in a policy document will inevitably waste reusable material and therefore increase carbon emissions.

Salvo and BRE surveys (BigREc 1998 and 2007, and MiniRec 2012) included:

Beams, joists, trusses, rough sawn planks, railway sleepers, baulks, ceiling joists, floorboards, roof boards, wood strip, woodblock, parquet, re-sawn beams, doors, door surrounds, window frames, window surrounds, shutters, staircases, facades, features, mouldings, skirting, dado, cornice, porches, cladding, carved work, fire surrounds, church interiors, pub interiors, old shop fittings, institutional woodwork, statues, bygones, ships figureheads, paneling and panelled rooms.

Salvo and BRE surveys excluded scrap wood, waste and unused new wood <10 years old.

The National Community Wood Recycling Projects figure is for dimension timber. Another 85,000 m3 of wood was sold for firewood and kindling.

UK Furniture Recycling Network (now Reuse Network) - 2015 throughput of 580,000m3 of secondhand wood or wood-based domestic and office furniture, and the remaining 400,000m3 was recycled probably for refuse derived fuel (RDF). 2020 figure extrapolated from website<sup>5</sup>

WRAP UK 2011 market report for 'waste' wood estimated reclaimed wood 1.2million m3 of dimension timbers; 6million m3 of clean or whole (small?) pieces of timber. London generated most dimension demolition wood at 160,000m3 (total 800,000m3), and Northern Ireland least at 24,000m3 (total 120,000m3). 'In the 1990s demolition timber of 6million m3 (annually) a large proportion of which would have been sold into the reclaimed wood market in the 1990s is now usually diverted to the waste stream'. WRAP advises the UN, and encourages recycling.

UK Forestry Commission report on new sawn dimension timber stated 'the UK was the world's third largest importer of dimension timber after China and Japan'. 2014 imports to the UK were 6.4million m3. 2014 new wood from UK forests 3.8million m3

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<sup>5</sup> <https://reuse-network.org.uk/wp-content/uploads/2021/05/Social-Impact-Report-2020.pdf>

## WPT1D3.2 Soft beta launch of the label

### Introduction

A basic label was chosen for the launch with hooks for the media and consumers. It also begins to answer some larger issues, such as chain of custody.

Market research found that the TR label was of interest mainly to consumers, promoting genuine reclamation and reuse. Technical points from the reclamation trade and professionals in the construction sector would be subject to further discussions and resolutions covered in the long term aims (WPLTD2.2).

Comments and opinions of professionals and consumers from the market research were:

- 100% said that reclamation and reuse were very important or extremely important;
- 95% said verification by a seller that a reclaimed item was genuine was important;
- 80% said an item's history, benefit of reuse and aesthetic appeal were important;
- 80% thought a Truly Reclaimed label would help counter the use of imitation.

The market research indicated that the Truly Reclaimed label must focus to a large extent on the principal that in adding the label to an item a supplier was verifying that a reclaimed item was genuine.

The research showed that reclamation and reuse were very, or extremely, important to private consumers, as well as to the professional actors in upstream sources of supply, stockholding reclamation dealers, and the downstream specifiers of reclamation.

The basic principals for the launch of the TR label were agreed during one workshop and subsequent discussions with a group of launch candidates to be:

- the Truly Reclaimed label would assure buyers that an item was authentic and genuinely reclaimed and compliance with the rules of the Truly Reclaimed scheme (see later);
- the operating dealer would optionally use the label with a machine-readable QR code linking to a web infosheet about the general history and environmental benefit of reclamation and reuse and, optionally, specific information about provenance and carbon savings of reusing that product or batch of material. There would also be an



option to include such a premises on a TR map - billed as the go-to for TR suppliers or eco-conscious design destinations to visit;

- the reclamation trade required the basic scheme to be as simple as possible to operate;
- the rules of the scheme would be agreed with reclamation dealers;
- the scheme would be regulated by Salvo in consultation with the reclamation trade;
- only reclamation dealers who had agreed to the Salvo Code for good practice in stock purchasing (or similar) would be eligible to register for the Truly Reclaimed scheme;

Subsidiary principals for the launch label were:

- the TR scheme allows the supplying dealer to determine how the use of TR is promoted to the customer;
- the TR map would raise the profile of reclamation and reuse and encourage visitors to find and frequent reclamation-friendly premises;
- the TR map would be useful to the press and media for case studies and examples;
- TR would be inspirational to some specifiers and DIYers to see examples and case studies of reclamation and reuse.

## Providing assurance

The Truly Reclaimed scheme intends to provide assurance that an item, material or product is genuinely reclaimed. This assurance provides confidence to:

- a visitor interested in the story of reuse
- an owner planning reuse
- a specifier who would like certainty
- a designer keen to be eco-friendly

## Consumer-facing

The label will appear in two forms - as a disc with a logo on its own, or combined with a QR code.

The Truly Reclaimed label will be visible to people who may not connect extending the life of a material, product or element of a building to the reduction of emissions of carbon dioxide and other greenhouse gases.

The primary use of the labels is as a standalone to inform consumers that an item is Truly Reclaimed. The dealer verifies that the item is genuinely reclaimed and controls the information which appears when a QR code is used to link to a web page on domains such as [trulyreclaimed.org](https://trulyreclaimed.org) in English or [reemploiatteste.org](https://reemploiatteste.org) in French.

The Truly Reclaimed scheme is operated by registered stockholding dealers in antique, reclaimed and salvaged material, products and elements who control the fixing of Truly Reclaimed labels on reclaimed products which they supply, to verify that they are genuinely reclaimed. These labels aim to inform consumers of the benefit of reclamation and reuse including its impact on reducing carbon emissions. The labels also give confidence to a buyer or end user that an item is not a faked reclaimed material, product or element.

In September 2021 the scheme was soft launched in beta to a small group of stakeholders in the UK, Ireland and France. It will be administered and regulated by Salvo.

A condition for a certification or collective trademark is that it must be regulated by an entity which does not itself apply the trademark. Salvo is applying for a certification or collective trademark in UK and Europe to gain legal protection over the label's use.

Salvo is devising a system for registered operators which uses smartphone forms with menu-driven inputs which load into secure collaborative spreadsheets on the backend. This will allow Salvo to avoid coding the input fields at this stage, and provide an easily adaptable system. Eventually a fully coded app will be created for inputs and outputs.

Outputs will include general info sheets about the benefits of reclamation and reuse, linked from Salvo's websites and the QR tags in hospitality and retail sectors. Some pages will feature explicit details of the history or provenance of a specific reclaimed product installed in a publicly accessible interior or exterior space, together with its carbon benefit, and other information useful to consumers, specifiers and designers.

## QR code, mapping and infosheets

A QR 'quick response' code is a type of optical machine-readable barcode invented and patented, but free to use worldwide, by Japanese manufacturer Denso Wave in 1994. Smartphones have had built-in cameras with QR code recognition since 2002 using an app, and since 2017 have been built into smartphones operating systems which would make the infosheets easily accessible. The label may include a QR code which links to 'Truly Reclaimed' infosheets on the domains [trulyreclaimed.org](https://trulyreclaimed.org) [reemploiatteste.org](https://reemploiatteste.org) a proposed specific consumer-facing Truly Reclaimed scheme domains, or [futureuse.co.uk](https://futureuse.co.uk) a mainstream construction reclamation information domain. Both domains are owned and managed by Salvo.

The web pages opened on [trulyreclaimed.org](https://trulyreclaimed.org) [reemploiatteste.org](https://reemploiatteste.org) or [futureuse.co.uk](https://futureuse.co.uk) by different QR tags would be of three main types - general anonymised, general dealer focused, specific to the reclaimed item:

- a. a general page about the Truly Reclaimed scheme, the benefits of reuse, the salvage trade, tips, stories and links - suitable for general use in any location by operator or end-user;
- b. a dealer page with info about its reclaimed stock and the carbon benefit, plus the Truly Reclaimed scheme, the general benefits of reuse, the salvage trade, tips, stories and links - suitable for general use in any location;
- c. a product page with info about the stock (to be) located in the end-user premises with carbon benefit of that stock - for a QR tag on reclaimed stock installed at the end-user location - and end-user location marked on a truly reclaimed product map available on [trulyreclaimed.org](https://trulyreclaimed.org) or [futureuse.co.uk](https://futureuse.co.uk) or not mapped
  - with no source or provenance info - no photos or history of the source
  - with source info but no source location - photos or history of the type of building - country of source given, but address and location remaining undisclosed
  - with full disclosure of source location, photos, social and industrial history, type of material

The reclamation dealer operator is the responsible party in control of the release of information, mapping, and use of the label. Salvo is responsible for the content of the web pages and calculating the carbon benefit of the reuse of the reclaimed items.

A desktop or smartphone web app will be available for use by the operator to input information mapping, mass, type of material and history.

This information is then transposed by Salvo to create a web infosheet to which the QR tag is linked. It also provides mapping data for markers on the reclamation map.

## Consumer-facing reclamation info

The web infosheet allows an interested visitor to a shop, restaurant, hotel, bar, outdoor space or a salvage yard, to have access to information about the environmental, economic and social benefits of general and specific reclamation and reuse.

It will also give practical information about where to source, specify, use and maintain similar reclaimed material. The infosheet will include information about why it was necessary to create the Truly Reclaimed label to counter the increase of fake reclaimed products.

The reclamation map of shops, hotels, restaurants and other premises which have used antique, reclaimed and salvaged materials may be of interest to eco-conscious consumers. This might stimulate more reuse of Truly Reclaimed items by owners of premises, and raise awareness of the increase of carbon emissions generated by fake reclaimed products.

The label can be applied to architectural antiques, modern demolition salvage and every period between.

## Mainstream construction case studies

The mapping of places where reclamation has been reused, and the carbon benefit measured, may inspire more designers and builders to use genuine reclamation and think twice about 'getting the look' with modern carbon intensive lookalikes.

We also see the future potential in the label for projects and professionals that want their commitment to reuse recognised. The label may document a long journey from dismantling to reclamation yard, or it may also record a simpler switch from demolition to reuse on the same site or another nearby site by an architect or engineer.

## Marketing for stakeholder dealers

Dealers who operate the Truly Reclaimed scheme, if they wish, will be individually promoted through QR tagged examples of reuse in the hospitality and retail sectors. The Truly Reclaimed scheme will increase the profile of the trade generally. With case studies at our fingertips it will be easier for Salvo to promote the trade to the press.

The Truly Reclaimed scheme may help dealers to promote the beneficial impact that their business is having in reducing climate change to their local media and local authority. This may help with reuse in planning applications, and sympathetic views on planning permission for salvage yards and signage. Salvo will explain to Truly Reclaimed members how every scrap reused increases the planet's carbon dioxide sequestration capacity.

Salvo has promised that it will make a case for bringing salvage into carbon emissions capture and storage funding so that dealers who measure their carbon savings will be financially compensated.

## Statistics, and carbon trading

A collection of data from Truly Reclaimed case studies will add to several other Salvo data sources to give an anonymised measure of the amount of reclamation and reuse, and the total carbon saved in a region or country, and in which product category.

*(Statistics gathering is also part of FCRBE WPLTD2.2)*

## Recommended practice

**Storage separation between reclaimed and new material** - it is important that new and reclaimed material is kept visibly and physically separate while stored in a yard in order to avoid possible confusion to both staff and visitors. How this is done may differ for each Truly Reclaimed operator. Salvo may make rules about this in future based on Truly Reclaimed operators experience.

**Signs about reclaimed and new** - Salvo recommends that a Truly Reclaimed stockholder business indicates to visitors and staff the approximate percentage of its stock which has been verified as reclaimed with signs stating that in its premises.

**Tally sticks - unique verifiers for reclaimed wood?** - Could dealers use the old split wood tally stick to identify batches of wood flooring? The author suggests that when visiting a source, or a sample is brought to a yard, mark and then split the wood and use a smartphone to photograph both pieces together lying on the wood prior to lifting. The photo will contain the location of the floor. One piece stays with the batch of wood, the other is given to the stockholding dealer. When the batch arrives with the half tally, the stockholder matches their piece which verifies that the wood originates from the correct location. This photo is then passed to the end-reuser and the tally is set into the floor or cladding near the QR tag, thus providing evidence of an exact match to the original batch of wood.

**More pieces of evidence and measurement** - the list of items below may be desirable but are not mandatory at this stage:

- a photo of the item in-situ, and in piles prior to collection from site
- dimensions and total quantity in the batch (m run, m<sup>2</sup> or m<sup>3</sup> - or imperial measurements)
- the common name, genus or species
- weight and moisture content of a measured piece (in order to calculate density, mass and carbon benefit)
- the age, location, type of building, and photo of the building from which it came
- the story of the item from its source, or an indicative story of a similar item
- the carbon benefit of the reuse of the item using the 'avoid new' method in units of kgs or tonnes of CO<sub>2</sub>e per batch, m, m<sup>2</sup> or m<sup>3</sup>. For example: *'The carbon benefit of reuse of a batch of 100m<sup>2</sup> of English oak flooring is estimated to be 9.32kgsCO<sub>2</sub>e per m<sup>2</sup>'*

**Social and industrial history ...** the history of a reclaimed material or product can look at the source of the material or product, the people involved, the manufacturing processes, the design and construction history of the building from which it was reclaimed, and the recent history of that building. It may be possible to find old and more recent copyright-free photos of that building.

**Environmental benefits ...** it helps the environment to reclaim and reuse. Many millions of tonnes of materials are rescued from demolition sites by the UK architectural salvage trade, although many more are destroyed which wastes their embodied carbon, and increases climate change. Reuse is measured in CO<sub>2</sub>e and every tonne of carbon reused increases the planet's vital capacity to sequester more carbon dioxide which in turn reduces climate change.

**Economic sustainability ...** some ancient doors in Britain are around 1,000 years old, many thousands of tonnes of oak beams are hundreds of years old, millions of centuries old doors are destroyed each year. This does not make economic sense. Two decades ago 700,000 tonnes of reclaimed timber was rescued by UK's salvage trade but with property value soaring and ever-faster demolition now considerably less is saved. New, lesser-quality timber panel products are transported halfway around the world made into kitchens which are replaced on a whim. How is this economically sustainable?

**futuREuse ...** to make reuse more acceptable to mainstream construction's certified EPDs (environmental product declarations) for new material, in future the Truly Reclaimed scheme aims to investigate the option of RPDs or 'reclaimed product declarations', another of Salvo's proposals within the FCRBE project. Historically, reclaimed material in UK and Ireland has been a one or two per cent of the total construction materials market. The Truly Reclaimed scheme and RPDs may help to increase the amount of reclamation and reuse.

The beta rules will commence in November 2021 and will be subject to a trade review after 12 months. The rules are intended to apply in the UK, Ireland and France, and will be administered by Salvo. The draft rules will be translated into French and other languages if businesses from other countries wish to join the beta launch. The launch businesses will run the scheme under the principal rules outlined below. More rules may be added with consensus agreement of the launch businesses. This method proved successful when the Salvo Code was rolled out.

A closed online discussion forum will be set up for members to discuss launch issues and changes.

Agreement to the tenets of the Salvo Code was considered a prerequisite to the majority of UK dealer stakeholders in the Truly Reclaimed scheme (see Annex 1 - The Salvo Code).

A French dealer expressed an interest in launching the scheme in France for a range of reclaimed building material and architectural antiques. This will help to create a multi lingual version sooner rather than later in order to debug the rules for operators align them with French and EU regulatory requirements. Ideally, all countries will operate the same scheme.

## The Truly Reclaimed launch process

1. Salvo partners will agree this document (*November 2021*)
2. This report is circulated to FCRBE partners and launch stakeholders (*November 2021*)
3. The web app upload form, Truly Reclaimed website, QR code tags tested (*Nov 2021*)
4. More stakeholders will be informed, and a story published in SalvoNEWS (*Nov 21*)
5. More stakeholders (a target of 10 to 30) will be requested to join the beta launch (*Nov 21*)
6. TR agreement, induction and beta launch complete (*December 2021*)

## The launch budget

In essence the 'Truly Reclaimed' scheme is a system for registered operators to fix labels to stock which they verify or attest (same thing) that an item is an antique, reclaimed or salvaged material, product or element. With the external backdrop of Covid19 and disruption in the upstream supply of reclaimed material and downstream changes in the circular economy, after discussions and meetings, our ideas were honed into what was achievable and fundable.

Interreg ERDF has co-funded 60% of the costs between 2019 and 2021, but Salvo would be funding the subsequent roll out and longer term launch, regulation, administration and management of the label from the beginning of 2022 onwards.

The focus for the launch is on the consumer-facing aspect of the label because that is where we see the immediate potential with the power of the campaign to influence decisions in construction.

The Truly Reclaimed scheme needed to be administered by Salvo on a limited budget, and was also requested to be as simple as possible to start with for reclamation dealer operators.

## Choice of the launch phrase graphics and logo

Research into trademarks for other organisations for a certification or collective trademark indicated that in operation some are highly specific with exacting requirements which can not be deviated from, while others, for example ISO certification, had no graphic trademark logo but instead made guidance suggestions for its certified member businesses to use.

For the launch we received feedback from dealers about which of several options they preferred, so we planned to include a 'tick' on a disc with the words 'TRULY RECLAIMED' in upper case. The French launch logo would be similar but with a meaningful phrase in French, which after extensive discussions was agreed would be 'Réemploi Attesté'. It was also decided to use the native English text for to launch in Dutch speaking areas. None of these decisions are immutable at this stage, although the cost of one certification or collective trademark in UK and EU is around €3,000, and Salvo planned to apply while the application costs were eligible for co-funding - at least for the phrase 'truly reclaimed'.

We tested a variety of logos, and found that the trade preferred a simple disc with a tick in the middle and bold wording around the perimeter. Again, this was not immutable but would serve its purpose for the launch. The additional QR code may either be combined on the logo, or added alongside separately. The launch version of the label was proposed to be brown with the words 'Truly Reclaimed' reversed in white or a light colour.

The basic label, with the disc and tick logo, will be applied by registered operators to antique, reclaimed and salvaged material, products and elements, to verify (or 'certify' or 'attest' - all of which seem to have the same meaning) that a material, product or element is genuinely antique, reclaimed or salvaged and is not a 'fake imitation'<sup>6</sup>. An optional addition to the basic label is a QR code which opens a responsive web page about the carbon benefits of reclamation and the Truly Reclaimed scheme, and will allow endusers who own shops, restaurants, hotels, bars and outdoor spaces, to have their premises to marked on a consumer map of places and spaces to visit where reclaimed material can be seen.

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<sup>6</sup> See definitions p52



## Branding Truly Reclaimed for launch phase

### Réemploi attesté - French translation proposed

The author proposed the phrase 'Truly Reclaimed' in 2013 because it seemed to most positively identified items as genuine antiques, reclamation or salvage. At that period, the label was intended for use in the UK and possibly Ireland. By incorporating the Truly Reclaimed scheme into the EU project, its geographical scope was extended to France, Belgium, Netherlands, and Luxembourg. According to Project Partners, the English phrase 'Truly Reclaimed' would be acceptable to Dutch speakers, but not for French speakers. Multiple discussions with native French partners and stakeholders were held, with many suggestions made. One which seemed applicable to the author, an English speaker, was 'Réemploi Attesté', for which artwork was produced.

Salvo received tacit agreement to the phrase 'Réemploi Attesté' from a few native French-speaking reclamation stakeholders, one of which plans to launch the label in France.

### The Truly Reclaimed logo

Salvo produced a variety of logos<sup>7</sup> and found the trade preferred a simple disc version with bold wording around the perimeter. The benefit of this chosen design is that it translates well in different sizes and allows for flexibility with various colourways. The proposed version of the label for launch is to be brown with the words 'Truly Reclaimed' reversed in a light colour. The French launch logo would be similar, but with a meaningful phrase in French 'Réemploi Attesté'. As mentioned previously, it was decided that the label should use the native English text for the launch in Dutch speaking areas.

Registered operators will apply the basic label to antique, reclaimed and salvaged material, products and elements, to verify, certify or attest that a material, product or element is genuinely antique, reclaimed or salvaged and is not a fake imitation.

The TR operator has sole discretion in how they implement the label. The label can be printed as a tag and physically attached to products, or it can be marked on to an item, for example, in paint with a stencil or by laser-engraving. The optional QR code may either be combined on the logo or added alongside separately.

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<sup>7</sup> see Annex 2 p93 for the sample logos

## EU/UK 'certification' or 'collective' trademark?

The graphic and the phrase will be trademarked in UK and Europe, but this can only be applied for after the rules and regulations for the scheme have been agreed by the trade. There are two choices for the trademark - a certification trademark or a collective trademark. A conventional commercial 'brand trademark' would not be appropriate for the Truly Reclaimed scheme. The correct choice would seem to be a certification trademark. The UK and EU rules governing eligibility for each type of trademark are similar<sup>8</sup>. The following are the UK rules for the two types of trademark taken from the UK government website, in summary:

A certification mark is defined in Section 50(1) of the Act as:

'A certification mark is a mark indicating that the goods and services in connection with which it is used are certified by the proprietor of the mark in respect of origin, material, mode of manufacture of goods or performance of services, quality, accuracy or other characteristics.'

The main feature of a certification mark is that it is used not by the proprietor of the mark but instead by his authorised users for the purpose of guaranteeing to the relevant public that goods or services possess a particular characteristic. The proprietor's mark certifies the presence of the characteristic and will authorise the use of the mark to anyone who can demonstrate that the goods and services for which it will be used have that characteristic.

A collective mark is defined in Section 49(1) of the Act as:

"A collective mark is a mark distinguishing the goods or services of members of the association which is the proprietor of the mark from those of other undertakings."

The main feature of a collective mark is that it is used as an indication to the relevant public that goods or services originate from a member of a particular association. It is therefore a sign of membership.

Certification and collective marks therefore differ from "ordinary" trade marks because an ordinary trade mark is one that distinguishes the goods and services of one particular trader (a single trade source) from those of other traders.

The examination of certification and collective marks consists of two distinct phases. Firstly comes the initial examination of the application itself; this includes an assessment of the mark's inherent acceptability under both absolute (distinctiveness and deceptiveness) and relative (confusion with other marks/rights) grounds together with some additional aspects of examination peculiar to collective and certification marks. Secondly comes an examination of the regulations (that are required not less than three months after the application date) that govern the use of the certification or collective mark.

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<sup>8</sup> See more at <https://www.gov.uk/government/publications/collective-and-certification-trade-marks> and <https://euipo.europa.eu/ohimportal/certification-and-collective-marks>

The trademark applications and fees will be submitted by Salvo Ltd to the UK and EU authorities in October 2021. The trademark registration fees, jointly estimated in excess of €3,000, must be paid in advance. A certification mark is a specific type of trade mark which guarantees that the goods or services bearing the mark meet a certain defined standard or possess a particular characteristic. The owner of the mark (provisionally Salvo Ltd) will define those standards or characteristics. Such marks are usually registered in the name of trade associations, government departments, technical institutes or similar bodies. A collective mark is a specific type of trade mark which indicates that the goods or services bearing the mark originate from members of a trade association, rather than just one trader. Advice will be sought regarding the two types prior to an application being made to the UK and EU trademark offices.

Salvo Ltd can apply for Truly Reclaimed scheme when its operating rules have been approved. In the body of the text of this report these rules have been included in a bold font thus: **Rule**

The trademark will be owned by Salvo Ltd and licensed for use by registered Truly Reclaimed operators.

A condition for a certification or collective trademark is that it must be regulated by an entity which does not itself apply the trademark. Salvo Ltd will not be applying the label, and is applying for a certification or collective trademark in UK and Europe to gain legal protection over the label's use - probably simply the text wording not the graphical logo.

The QR tag on labels links to a web page which has contents controlled by Salvo which may request consumer feedback about the labels and participation in further market research.

The text phrase 'Truly Reclaimed' will be trademarked after the rules have been agreed and approved by the trade stakeholders. This will be submitted to the UK authorities in December 2021. An application for an EU trademark will be made in 2022. The applications will be for a certification trademark, not a 'collective trademark'<sup>9</sup> nor a conventional commercial brand trademark.

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<sup>9</sup> See more at <https://www.gov.uk/government/publications/collective-and-certification-trade-marks> and <https://euipo.europa.eu/ohimportal/certification-and-collective-marks>

## Definitions

The rules for the scheme require definitions of the specific wording used. After these have been agreed and approved in English they will be translated into French and other languages as required.

### Truly Reclaimed scheme

A scheme where registered operators are licensed to add labels bearing the trademarked phrase 'Truly Reclaimed' to antique, reclaimed and salvaged material, products and elements which they verify (or attest) have had at least one genuine previous use or life.

#### ... 'at least one genuine previous use or life'

The phrase 'at least one genuine previous use or life' is intended to restrict new material from being accepted as Truly Reclaimed via a spurious first use. This will require a definitive inclusion and exclusion list to be gradually compiled on a case by case basis with the consensus agreement of scheme members. For example, building site timber and steel loosework, formwork, hoardings and shuttering, supplied new and with a short term use before being reclaimed, is generally accepted as a 'truly reclaimed' product by the reclamation sector. It is unlikely but possible, however, that scheme rules may need to be revisited if procedural changes ensue which appear to encourage short term reuse in order to supply downstream demand from the reclamation sector.

#### ... 'registered operators'

The phrase 'registered operators' means persons or businesses in the reclamation trade that have given signed undertakings to abide by the rules and principles of the Truly Reclaimed scheme. They may also attest 'Truly Reclaimed' samesite and site2site salvage and reuse. In 2022 construction professionals may be registered to use the label for samesite and site2site salvage and reuse.

#### ... 'antique, reclaimed or salvaged material, products and elements'

The phrase 'antique, reclaimed or salvaged material, products and elements' includes antique, old, reclaimed, salvaged, secondhand, bygone, vintage, material, products or items from old buildings, exteriors, gardens, interiors including aviation, decorative, defence,

hospital, industrial, institutional, office, maritime, medical, prison, railway, road transport, spacecraft, ships ... and other items which will be added to this list from time to time.

### ... 'material'

Means matter from which a thing is made. Historically, the earliest use of the term 'reclaimed building material' of which Salvo has evidence is in a printed newspaper advertisement in Devon, England, in 1955. The term 'building material' in British and Irish is used for basic building components made from similar material, such as a brick, roof tile or floorboard.

### ... 'element'

The term 'element' is used in Britain and Ireland for an assembly of building material and products, such as a complete wall, or a timber boarded floor with joists and insulation. Building elements are also used to compare carbon data of dissimilar structural types, for example the embodied carbon in a concrete frame structure compared to a timber framed structure.

### ... 'samesite salvage and reuse'

Reuse of an antique, reclaimed or salvaged building material, product or element on the same site from which it has been reclaimed. It may require storage and processing, either on site or elsewhere. The expression 'same site' as two words, or same-site hyphenated may also be used. The expression *in-situ réemploi* is used in France and Belgium. The term *samesite reuse* was first used by Salvo in 2011.

### ... 'site2site salvage and reuse'

Reuse of an antique, reclaimed or salvaged building material, product or element removed from one site and transported for direct use on a different site, avoiding stockholding and the dealer network. The term 'site to site' salvage and reuse was created during the FCRBE project. The reclamation dealer network also favours site2site salvage and reuse in order to avoid the time and expense of so-called 'double-handling' - where loads of material are delivered to a reclamation dealer, unpacked and stocked, and then sold, packed and transported for delivery to the new client. However this kind of reclamation dealer or demolition contractor site2site salvage and reuse is rare in practice.

### ... 'labels bearing the Truly Reclaimed trademark'

Labels bearing the Truly Reclaimed trademark may be fixed by registered scheme operators to stock in showrooms or yards, in transit and by end-users with the supplying registered operator's agreement. Labels may appear in a number of ways applied by, or under the control of, the the registered operator. For example:

- On stock or signage in yards and showrooms
- On wrapping, boxes, crates or labels fixed to stock in transit
- On items installed in the end-user's premises

## Rules

A story about reclaimed material will be accessible online by clicking a smartphone onto a small QR tag placed on the reclaimed material. This can be used by visitors to the end-reuse location, and will also be viewable on a map of more examples of Truly Reclaimed reuse. This might encourage visitors to choose Truly Reclaimed spaces to visit which could be a commercial interest to the Truly Reclaimed end-user supporter. It might also add more interest in the environmental benefits of genuine reuse, and give greater confidence in genuine reclamation in other projects by more in the hospitality and retail sector.

*NB: In the examples below timber and wood have been used, but in real life the Truly Reclaimed label could apply to any antique, reclaimed or salvaged item.*

**RULE 1: The Truly Reclaimed scheme will be regulated and administered by the regulator Salvo Ltd, which licenses the use of the Truly Reclaimed scheme, logos, marketing material, web space and QR tags, to Salvo trade or professional members who agree to operate the Truly Reclaimed scheme.**

*Consensus agreement will be sought from operators for changes to the scheme regulations after the initial launch.*

**RULE 2: A product or material is considered Truly Reclaimed when verified by a registered operator. Verification requires the operator to state on the record that a specific material, product or item is reclaimed. The verification can be recorded in-house by the operator using their own a manual or online system, or by using the Truly Reclaimed smartphone web app. As the Truly Reclaimed scheme regulator, Salvo will periodically inspect the list of verifications.**

*The operator will be a reclamation dealer or person or entity registered as a Salvo member to operate the Truly Reclaimed scheme. This will allow self-certification for samesite and site2site reclamation and reuse persons or business entities outside the dealer network, for example, an architect, builder, demolition contractor or construction professional.*

*More about verification*

**Chain of custody verification** - a chain of custody is a record of a material from source to end-reuse. There is a hierarchy of complexity in terms of accuracy, difficulty and transparency for samesite salvage, site2site salvage and a transfer via the dealer network.

Example 1: Simple chain of custody verification - samesite salvage in a public building with a photo, text and numerical record of an item or a batch of material to be carefully dismantled, cleaned and processed, then stored in a safe position preferably in the same room while other works are undertaken, and then replaced in the original position after a short period of time. An example would be removing and replacing skirting after electrical or plumbing services have been renewed.

Example 2: Complex chain of custody verification - the verification of a landlocked unlisted collapsing ancient timber-framed barn on a private property surrounded by modern farm buildings, the owners of which will not give permission for publicity or photos, nor allow an approach to the local authority to see if permission might be possible for a relocation. The only option would seem to be buy the material for dismantling, taking some photos and measurements surreptitiously, and carefully dismantle the materials for sale by a salvage yard. The salvage dealer would verify that the material was Truly Reclaimed based on experience but would not be able to provide evidence. If the material was then sold a few times to other dealers, each time with no provenance details fairly quickly no knowledge would pass to the last dealer who would offer the materials with a Truly Reclaimed label, but no provenance details.

**Trusted reclamation expert verification** - longstanding stockholding members of Salvo who have operated the Salvo Code for many years are trusted reclamation experts with a deep knowledge of reclamation and reuse of reclaimed building material. Outside the world of antique, reclamation and salvage there is a general lack of support and knowledge of reuse of reclaimed build material. This seems especially the case among 'circular economy' recycling professionals who couple 'reuse and recycling', as if one option does not preclude the other. Also in the UK, building conservationists seem to prefer new material to reclaimed when restoring old buildings, and tend not to recommend that old material jettisoned from demolition should be salvaged for reuse elsewhere. LCA experts is another group that has evolved a system which creates stark barriers to long reclamation and reuse cycles. They are also unable to determine the carbon benefit of reuse except through the lens of new products and have failed to devise a method for placing reclamation on a par with new manufacture, but their system consistently prefers new products to reclaimed ones.

**Visible evidence verification** - the undersides, edges and faces often show clear or trace evidence of dust, dirt, glue, nail holes - the evidence of a previous life. Suppliers of genuine reclaimed timber often process reclaimed wood, for example by cleaning, denailing, resawing, planing, thicknessing and moulding surfaces and edges. This makes, for example, floors easier and cheaper to lay and more homogenous, or fully cleaned, waxed and polished reclaimed hardwood beams easier to fix. Reclaimed wood can be difficult to visually identify as reclaimed, and instead may begin to appear fake. When visual evidence is absent this does not mean that the wood has not had a past life, but a specifier may need assurance that it is Truly Reclaimed, which in turn makes trust vital. If the Truly Reclaimed label holder has a long record of dealing in reclaimed building material, is a longstanding member of Salvo and the Salvo Code, then the assurance given in verifying that wood is genuinely reclaimed is taken seriously.

### *Scope of the term 'reclaimed'*

**RULE 3: Reclaimed means a material, product or item, of any age which has had at least one previous use or life, or an unused item more than 50 years old.**

The past life may have been in, for example, a building, landscape, mechanism, ship or structure, and may have had a structural, functional or decorative use.

The term 'unused item' is intended to allow old items occasionally found stored in remote areas of buildings, or logs from trees cut down 100 years ago and lost, usually sunk, in a lake.

### *Recently newly made reclaimed wood*

**It is possible for Truly Reclaimed wood to be recently logged timber, used first in temporary works in, for example, events, exhibitions, film or TV sets, hoardings, loosework, props or shuttering, which is dismantled, may be processed or resawn, and then offered for reuse to a Truly Reclaimed operator.**

### *Visible evidence of past use*

**RULE 4: Truly Reclaimed material may or may not show visible evidence of a past use**

*For example, it may be timber freshly resawn from a Truly Reclaimed beam which has been requested by the customer to be mechanically distressed or given a surface finish to make it look more reclaimed.*

### *Info sheets*

**RULE 5: The Truly Reclaimed end-reuse location may contain a QR tag linking to an online info page containing the story of the Truly Reclaimed material. This will only be produced with consent from the supplier, enduser, and the Truly Reclaimed operator. The amount of information released is described as full, partial, none, generic or specific, explained below.**

### **Full story**

**The ideal situation is when the full story of the reclamation and reuse is publicly available** - information about the material or product can be seen by anyone visiting the reuse location on a QR tag, leaflet or poster which might contain:

- a. generic information** about reclamation and reuse, not related to the specific material
- b. generic stories** about the material, products, benefits of reuse, not related to the specific material
- c. generic benefits** on reuse of reclaimed building material and products
- d. specific stories** about the reclaimed material - the what, why, when, how, where and who, about:
  - 1. materials** used to make the product
  - 2. manufacture** of the product
  - 3. the building** where the product was last located



- 4. **people** owners, workers, users, families and animals
- 5. **historic** events, industrial accidents, diseases, inventions ...
- 6. **economic** aspects of the material or product
- e. **specific benefits** on the reuse of the reclaimed material, its environmental impact, carbon benefit of reuse, increased planetary carbon sequestration capacity

### **Partial confidentiality required**

**When information is incomplete or partly confidential** because a material's source is incomplete or confidential, or its end-reuse is not in a publicly accessible location, or the owner of the end-reuse location wishes the material source to remain confidential, there may still be some middle ground which allows a partial release of information in the following examples.

- a. **Incomplete source** - some information may be available such as the country of origin or country of reclamation, the source building type and age, or the full details may be embargoed for a period of time.
- b. **Time embargo** - if information cannot be divulged for a period of time the Truly Reclaimed scheme operator will add all details known about the source when the Truly Reclaimed label is applied to the material, but they may embargo that data for a number of weeks or years, up to a maximum of 5 years after which time the data is automatically released and can be made public, apart from personal data eg personal name, home address etc.
- c. **Confidential end-use** - could cause a temporary delay by using a time embargo, or be permanent because the end-use is not in a public location. However, it could be possible that a private customer using reclaimed material may want their private visitors to be able to read the kind of information in the 'Full story' option above via a QR tag.

In this situation the following generic stories could still be used:

- a. **generic information** about reclamation and reuse, not related to the specific material
- b. **generic stories** about the material, products, benefits of reuse, not related to the specific material
- c. **generic benefits** on reuse of reclaimed building material and products

**However, Salvo recommends a cautious approach. It is better to maximise reuse than allow reuse to fail due to parties not wanting public exposure by in the Truly Reclaimed scheme.**

### **Full confidentiality**

**If no information can be exchanged with Salvo** then the Truly Reclaimed scheme cannot be used. The seller and buyer may require secrecy because releasing their names or locations would contravene their terms for example when transactions are with a major company, household name, national institution, royalty or nobility. Gentle persuasion may allow some information to be released which will mean that 'Partial confidentiality' (see above) may apply which may allow generic information to be released. The release embargo may only be at one end of the transaction, but implicitly this might block both ends.

**Evidence and measurement** - the checklist below may be desirable but are not mandatory at this stage:

- a photo of the wood in-situ, and in piles prior to collection from site
- dimensions of the timber and total quantity in the batch (m run, m<sup>2</sup> or m<sup>3</sup> - or imperial measurements)
- the common name, genus or species of wood, or simply 'softwood', 'temperate hardwood', or 'tropical hardwood'
- weight and moisture content of a measured piece (in order to calculate density, mass and carbon benefit)
- the age, location, type of building, and photo of the building from which it came
- the story of the wood from forest to now, or an indicative story of similar wood
- the carbon benefit of the reuse of the wood using the 'avoid new', or displacement method, in units of kgs or tonnes of CO<sub>2</sub>e per batch, m, m<sup>2</sup> or m<sup>3</sup>. For example: *The carbon benefit of the reuse of a batch of 100m<sup>2</sup> of English oak flooring is estimated to be 9.32kgsCO<sub>2</sub>e per m<sup>2</sup>, which is approximately 1 tonne of CO<sub>2</sub>e for 100m<sup>2</sup>.*

*Salvo uses metric measurements exclusively for carbon calculations.*

*Operator responsible for the release of Truly Reclaimed information*

**RULE 6: The release of all information is controlled by the operator. Salvo, as regulator, will never release any information but may promote or otherwise disseminate info sheets released for public viewing by operators.**

*Data protection, privacy, commercial confidentiality*

**RULE 7: The release of Truly Reclaimed information must be carefully controlled by operators**

- in order to protect data privacy of persons or property involved in a transaction**
- in order not to contravene public relations stipulations of any party**
- in order not to adversely affect the commercial interests of any party.**

The choice of owners, sellers, dealers, processors, specifiers and buyers who wish their personal details and source locations to remain confidential is covered by data protection

laws. Even for simple supply chains such as samesite and site2site salvage the Truly Reclaimed scheme may fail on data privacy grounds. Salvo's solution is to gradually increase supply chain transparency at an acceptable rate and with the agreement of Truly Reclaimed scheme operators.

## WPT1D3.3 Implementation of the TR label

### Use of the phrase and logo

Salvo will grant a license to an operator to use the label

A number of logo graphics were produced of which the one most favoured by dealer stakeholders was a simple disc with a stylised dynamic tick with the words 'Truly Reclaimed' in upper case around the perimeter. This has a strong simple message, can be printed at different sizes and can be used by differing businesses. It can also be marked on products for example, in paint with a stencil, by laser-engraving or by hot metal branding.

After the trademark has been obtained, it may be a requirement to add the registered trademark symbol (a capital R enclosed by a circle: 'Truly Reclaimed ®') to the written phrase or logo graphics.

#### Rule

##### **The phrase or logo may be used by a registered operator**

- **in their premises, on their vans or trucks, or elsewhere to indicate their support for the scheme**
- **on the packaging of, receipts and other paperwork for, products which are verified or attested as genuinely antique, reclaimed or salvaged**
- **on their websites on general pages, or on reclaimed product pages**
- **in advertising, provided the advert is for reclaimed products**

Salvo will encourage operators to use the logo to show support for the scheme, for example, in an operator's premises on signage, internally and externally, on vans and trucks, on receipts on the packaging or labelling of reclaimed products.

Salvo will also encourage operators to allow the use of the logo in the end-reusers premises, ideally attached to the reclaimed products which they have supplied.

### Outline of a transaction step by step

Here are the steps taken to complete a Truly Reclaimed transaction.

1. A seller contacts a Truly Reclaimed scheme stockholding operator offering to sell
2. The operator asks to take photos, measurements, and a small sample of material
3. The operator visits the source and takes photos, and a half of a split tally sample. The other half is left to be delivered with the material to the stockholder.
4. The material is delivered to the stockholder, the tallies are checked.
5. The material has now been geo-located with an exif photo.
6. The material is sold and installed in the publicly accessible end-use location.
7. The web app form is completed and uploaded.
8. A label and QR tag is created by Salvo.
9. Salvo uploads the data to the TR map.
10. Salvo calculates the carbon benefit of reuse of the materials or products.
11. Salvo creates and uploads the relevant product page

## Trade or professional registration, and first use

**TRULY RECLAIMED SCHEME OPERATORS:** There are two types of Truly Reclaimed operator, trade stockholders and construction professionals.

**TRADE STOCKHOLDERS:** Stockholding reclamation trade dealers will be able to verify and self-certify Truly Reclaimed material with full chain of custody from source/seller to end-reuser/buyer, as well as samesite and site2site salvage.

**CONSTRUCTION PROFESSIONALS:** Reclamation-friendly construction professionals will be able to register to verify and self-certify Truly Reclaimed material samesite salvage or site2site salvage on projects of a short time period. Longer periods which require stockholding would require the 'stockholding trade' membership.

### Step 1 - Application

An application is made to join Salvo and operate the Truly Reclaimed scheme as either a trade or professional member. Trade members will also be required to be full signatories of the Salvo Code. Professional members will undertake to uphold the principles of the Salvo Code where these apply to their activities.

### Step 2 - Induction and first Truly Reclaimed label and tag

An induction and training session is required which will explain the entire process of recording a reclaimed product or batch of material from reclamation to reuse, how to use the Truly Reclaimed label, QR tagging, data uploading and promotion.

Equipment required: smartphone or tablet with camera, together with a tape measure or good measuring app.

The initial test self-certification will be for a 'full story' Truly Reclaimed label of known provenance to be reused in the hospitality or retail sector. All data is uploaded directly by the operator. A QR tag will be generated to show how linking works.

Before the linking can be made live approvals need to be given. At this pre-approval stage details remain confidential to the operator and will be saved on the operators Truly Reclaimed online storage space. Next, approval must be given (unless pre-approval has already been given).

- (i) Firstly the source supplier gives irrevocable approval for the description of the location (this can be a pre-approval).
- (ii) Secondly the end-reuser gives irrevocable approval for the tag to be attached in-situ in the new location (this can be a pre-approval). The text and photos in the web page linked to the tag can be changed.
- (iii) Thirdly, the Truly Reclaimed scheme operator gives irrevocable approval (this cannot be a pre-approval) via their smartphone.

### **Step 3 - approval given or not given**

If approval is obtained from all three parties (the source owner, the Truly Reclaimed scheme operator, and the end-reuser) then this will be irrevocable.

If the reclaimed material is subsequently removed and sold back to the Truly Reclaimed scheme dealer when the process will start again. However, Salvo recommends that the story of the source building, if known, should always be a part of a new label.

If approval is given by the source but not the end-user then the QR tag cannot be fixed insitu. and the Truly Reclaimed scheme is adapted or if that is not possible, it fails. If there are ways to anonymise aspects of the label and use generic rather than specific labels to make it acceptable, then these should be considered.

If the parties cannot agree that a specific label can be used, then the QR tag could still provide a link to a generic page on the benefits of reuse of reclaimed wood on the dealer's website and/or on the website.

Salvo will keep a record of the names of the approvers on the Truly Reclaimed website, which the type of Truly Reclaimed scheme scenario applies - full, partial or none. If approval is not obtained then the Truly Reclaimed label will not be used.

### **Step 4 - the geotag link and web page go live**

The end-reuser location will now be seen on the Truly Reclaimed public map of places (such as bars, hotels, restaurants, shops) where Truly Reclaimed material may be seen. The tag will open a web page with a brief story of the wood, a few photos taken by the operator,

together with reasons why reclamation and reuse is a good idea, such as the environmental benefits, and the stockholding reclamation dealer or construction professional.

*As part of the Truly Reclaimed agreement, operators will allow their photos to be displayed on the Truly Reclaimed website.*

#### **Step 5 - a final email is sent to the source owner and end-user customer**

When the tag and web pages are all live, an email is sent to the parties who gave approval for them to take a look.

#### **Smartphone web app**

A smartphone/tablet web input form will be added here later, after the launch details have been approved by the Truly Reclaimed launch operators. The input form will also be accessible on a laptop and desktop.

Salvo has promised that it will make a case to the media, government, and locally for awareness raising with the public for bringing salvage into carbon emissions capture and storage funding so that dealers who measure their carbon savings will be financially compensated.

## **A resource for press and media**

Salvo will circulate Truly Reclaimed case studies and encourage the press to use TR infosheets in reports of reuse and the benefits, especially carbon benefits, and the dealers who supply products, for their stories. We hope they will mention Truly Reclaimed in the launch of new restaurant or retail openings and that this will add to the campaign for real reclamation.

## WPLTD2.2 Long term plan for Truly Reclaimed

### **Section 4: WPLTD2.2 Long term plan for Truly Reclaimed**

*The long term plan assesses ways in which the objectives of specifiers in mainstream construction might be met in future. It would also discuss the ways in which the Truly Reclaimed label would help with measuring the carbon benefit of reuse.*

### Future synergy ...

The elements for discussion seemed to naturally group by topic and profession in a synergy for the future.

This part of the report lists known and anticipated aspects of the Truly Reclaimed label to be looked at in 2022, many concerning technical issues which were mentioned by construction professionals of many disciplines who were asked for their opinions during the TR research phase.

This covered many topics that were investigated including batch issues, biophilia, business plans, blockchains, carbon footprints, CE marks, ecolabelling, certification, standards, circular economy, contaminants, carbon emissions trading, EU and UK policy, FSC, governance, graphics, logos, language, LCA, legal issues, market research, moisture content, insecticide, RFIDs, stakeholders, sustainable investment, testing, toxicity, trademarks, UN SDGs, weights and measures, distance travelled from source to yard, chain of custody, performance, continuity of supply, harlequin sets, standard of supply, takeback schemes, toxicity and testing. Many were 'moving targets' or topics that were too large, complex or off-topic.

Salvo's long term plan for 2022 is to discuss issues with the reclamation trade and other stakeholders to agree steps to incorporate solutions into the Truly Reclaimed label or its some of the issues.

### Building feedback

Most of these long term topics were researched and discussed with the trade between 2018 and 2021 in regard to the long term roll out of the Truly Reclaimed scheme.

The soft 'beta' launch and roll out in 2021 is planned to create an initial impetus by around 90 Salvo members who support the Salvo Code for good practice in stock purchasing.

The Salvo members are the primary stakeholder group who will operate the Truly Reclaimed scheme under proposed rules. These may require amending during the consultation period.

The market research showed that information on the web page or 'infosheet' linked from the QR code would be compiled by Salvo at the request and with agreement of the TR dealer, and that Salvo would be legally responsible for all aspects of the infosheet in order to minimise the chance of legal redress or other problems for dealers.

Each infosheet will have a feedback mechanism for the different interest groups - consumers, dealers, professionals, policymakers - to contact, discuss and make future suggestions for the Truly Reclaimed scheme.

## Measuring mass and carbon benefits

An important issue is the continued measurement of reclamation and reuse in UK and other countries. In the FCRBE deliverable WPLTD1.5 the author outlined Salvo's plan for the iteration and extrapolation of quarterly statistics of mass and carbon, so that commercial and carbon impacts of policy and regulatory changes can be tracked.

The table 'How to increase carbon emissions' (see p37) shows how the impacts of past policy mistakes may have damaged the trade and increased emissions. Past figures estimated totals based on a consistent method, so the totals show clear comparative changes. In future Salvo would like to collate actual figures and build real time cross-checking measuring systems which would benefit the trade and inform policy.

Here are some comments:

1. Respondent: 'Good quality Salvo stats needed for amount and breakdown of end-reuse by commercial sector compared to private consumers and end-reusers.' *Salvo research stats breakdown h&r (hospitality and retail) with private sectors.*
2. Respondent: 'The estimated carbon emissions saved by reusing reclamation published in infosheets and elsewhere will be calculated using mass and CO<sub>2</sub>e 'displacement of new' method for the time being. Salvo is proposing to develop a new system provisionally named 'multiple reclamation assessment' or MRA. Salvo will be responsible for published figures, but would also disclaim liability as all figures will be indicative, not absolute. *A long term intention is for carbon benefits of reuse of specific items to be available as a confidential quarterly report to individual TR dealers, and also aggregated anonymised and extrapolated quarterly statistics for TR dealers and local authorities.*
3. Respondent: 'End-reuse is important. For example, planters made from reclaimed wood probably have a short life, structural reuse is probably long life. *Salvo research end-reuse vs probable life, and who claims the carbon credit?*
4. Respondent: 'Could TR label state distances travelled? Wood reclaimed from UK sites is better quality than wood reclaimed from eastern Europe or China. Might encourage the movement of foreign bugs to Britain. And another: 'Imported TR must be properly marked and policed'. *Salvo to check regulations, and consult trade.*



5. Respondent: 'Length of time products in use depends on use. Structural timbers typically for life of building (60 years+). Internal joinery, e.g. doors etc 20-30 years and external joinery (e.g. windows) typically shorter and these generally rot so are not always suitable for reuse'.

## Attest, certify, verify

1. Salvo's position: Attestation, certification, verification and other words with legal certainty which could create an uninsurable legal onus for a supplier need to be clarified in law, not just in UK but other countries too - perhaps a legally watertight definition would be needed which protected the operator from lawsuits as a result of semantic errors. The Salvo Code had a simple issue which has not been resolved in 30 years of operating - what is legal proof of good title? It may be that there is no legal definition of verification. *Legal expertise may be required.*
2. A major environmental building group wrote: 'How will TR fit with the existing timber certification schemes that include recycled wood, eg. FSC and PEFC? TR could be of relevance to various parts of BREEAM schemes. For example, NC 2014 it could be relevant to MAT06 material efficiency, WST01 reuse and recycling and MAT03 responsible sourcing. If the TRW mark were to be used to report on responsible sourcing (MAT03) it would need to be assessed in the same way as any other responsible sourcing scheme. For example FSC and PEFC currently have been scored at 6/10 using the BREEAM criteria. Anecdotal evidence that the aesthetics of the timber is more important to users than the source/ history of the material' *Salvo will update TR's place within the regulatory sphere, if any. This may involve a move toward RPDs and RPRs.*
3. **Salvo: Reclaimed Product Declaration - RPD** analogous to a new product EPD or environmental product declaration. EPDs put durable and reusable reclaimed material and products at a disadvantage compared to new, and sometimes use risk/insurance arguments to justify the transfer of risk from construction sector to client. This may result in reclaimed material or products being excluded from standard construction indemnity insurance. An RPD is:
  - unlikely to contain the original manufacturer's carbon statements;
  - may have allocation unknowns with embodied carbon data;
  - could be subject to confusion over changes in the standards of supply which leave older (but serviceable) products seemingly unable to meet new standards;
  - have a lack of knowledge of constituents some of which may be considered harmful to health. The perceived advantages of reusing reclaimed products dates back to Roman times. In the 1970s the author reused reclaimed building material under clauses known as 'fitness for purpose' within the Building Regulations, using simple load/deflection tests if products were to be used structurally, and timber stress grading. The RPD is intended to initiate a new common standard for construction professionals and their clients to assess the carbon benefit of reuse. Salvo is planning to launch a website at [futureuse.co.uk](http://futureuse.co.uk) for a library of technical reclamation papers and a discussion forum.

## Chain of custody, provenance

1. Chain of custody or provenance - is a validated physical and informational pathway taken by a reclaimed item from source to end-use. There are ways in which confidence could be gained from using different procedures but most of these are ultimately constrained by the trustworthiness and transparency of the parties involved. More discussions are needed internally with dealers and externally with contractors. One respondent wrote: 'TR should be different to FSC certification but easy to follow like FSC'. *Salvo research into FSC 'easy to follow'*.
2. Chain of custody from demolition plus origination of material prior to first use; for reclaimed setts this might mean proof of ownership (ie good title) from dismantling to dealer, plus some kind of geomorphological match to one of 100 granite quarries in Sweden of 100 years ago. *Salvo definition 'constructive landfill'? or consign to informal private consumer sector (osd)*.
3. Increasing provenance demands placed on the reuse of reclaimed material in major projects - resulting in more waste? *Salvo research (osd)*
4. Batches of similar materials are mixed in salvage yards and then sold as one product to end-users. *Salvo define and salvage practice - isolate TR like FSC? Trade consultation (osd)*
5. A major developer wrote: 'History of the wood was important and would be of interest in terms of a managing risk. We would need confirmation of the source of the wood in order to ensure it would meet environmental requirements and not have a negative impact on our reputation' *Salvo consult*
6. Respondent: 'Chain of custody has been in place for a long time. We challenge designers and clients who don't specify chain of custody. It is very important that reclaimed wood is genuine. If the intention is to reduce the impact of a building then it is important. However, if just need to get some wood and get reclaimed, it is not so important. TR is probably a good idea: Depends on how much it costs. How prohibitive is getting the mark? A mark would raise the awareness of unmarked reclaimed timber. New wood has to have chain of custody. Authenticity - don't have this at the moment unless taken out themselves. There can often be procurement issues e.g. sourcing enough structural timber elements. Aesthetics are important for exposed items. Would pay more for TR wood. It was accepted that FSC/PFC was more expensive in the earlier days. However, commercial teams may see it differently, as their job is all about least cost. Want the mark fairly discrete. The history angle doesn't need to be linked to the material. Don't see FSC/PFC emblazoned on finished timber, see it on the raw products'.
7. Respondent: 'Would a TR label kickstart more visibility around reclaimed wood as a source? The first thing that comes to mind is - does the decline in the reclaimed wood market marry well with an increase in sustainably certified products? There is a need to demonstrate the source. Timber could be badged as reclaimed but is in fact from an illegal source. Even if the wood was from an illegal source in a previous life, reclaiming it for reuse is better than sending for energy recovery or landfill.

8. Respondent: 'Reclamation and reuse were 'not so' important for industry. We have one refurbishment job which is putting down reclaimed flooring but this is an exception. Personally, the answer would be 'very'.'

## Standards of supply

1. Standards of supply (SoS) primarily concern specifiers, sometimes due to risk averse insurers. Minimising or quantifying risk is an issue in construction which spills over into reuse. The definable qualities of a material, product or element of antique, reclaimed and salvaged items will be discussed with all stakeholders as a priority with a view of achieving an interim standard of supply to which the trade can agree. Salvo's mission has always been to support the stockholding dealer. It is important that the flow of reclaimed building material is increased, not decreased by decisions in this area. Speculative impositions which reduce reuse will not be welcome by the trade, nor the planet. *Salvo research insurance companies and reinsurers Swizerland? Also demolition standards of dismantling to maximise reclaimable material. Salvo research.*

2. Respondent: 'Salvaged wood now comes from eastern Europe but customers want Victorian pine floorboards from UK demolitions.' *Salvo research needed on global sources of supply and associated issues. Should the Truly Reclaimed scheme give demolition source country?*

3. Respondent: 'Standards of supply - building developments are being undertaken by ever larger companies which homogenise material, encouraged by major manufacturers, to eliminate non-certificated products - such as reclamation. Of course, such standardisation and eliminating the old comes at a cost - increasing carbonisation and climate change, while reclamation and reuse reduce climate change and save the planet. Consumer-facing TR may help redress the balance. Consumers understand the issues and increasingly mistrust the greenwash of large corporations.' *Salvo to consult trade and consumer stakeholders - are SoS a smokescreen by new material manufacturers?*

4. Respondent: 'TR label must cover uplifting or dismantling correctly, have a defined system for sorting, processing, packaging and storing, and sold by professional dealers with National Social Security Office numbers.' *Salvo trade consult (osd)*

5. Respondent: 'TR scheme probably a good idea. Only hesitation is whether those carrying out the reclamation are in a position to do this process. 1. Don't want to shut out 'artisan' workers who cannot afford the additional expense/time required. 2. This is probably most relevant to retail sector and the issue is predominantly cost. It could be useful to them but they may not necessarily be checking.' *Salvo research into not shutting out artisans.*

6. Respondent: 'Reclaimed wood must be fit for purpose - right timber for the job, durable and reusable workable sandable. The aesthetics are down to the architect. They can be fussy e.g. don't like knotty wood, certain colours/grains etc. Can be a pain.'

7. SW England architect: 'It would be interesting to know moisture content and insect infestation.' *Salvo consult on whether mc% could be standard for TR wood products?*

8. A building consultant wrote: 'I am neutral on the history of reclaimed wood, but might be interested to know if it is being reused from the UK rather than another country. Not

necessarily important to know the exact location it came from and its previous use. It is important to be thinking of the circular economy. There is a lot of potential for reuse of structural timbers for example. We need to consider how to specify structural timber; working towards standardised dimensions for structural timber elements (e.g. glulam) similar to how there are standardised dimensions for structural steel. This would make it easier to reuse the wood multiple times with standard structural calculations. Reclamation and reuse are between very and extremely important. Need to reuse more not just recycle.' *Salvo research are 'standardised dimensions' euphemism for 'we're not reusing reclaimed'?*

## Takeback

1. A 'takeback' scheme - when a reclaimed item supplied as TR was removed it would be offered to the original supplier for further reclamation and reuse, or offered to other TR operators - agree trade definition of takeback. *Salvo to organise a trial.*
2. Takebacks can work with samesite salvage - dealer removes, processes, returns to same site for a new end-reuse. *Salvo to consult with architects on takeback and samesite salvage.*
3. Takeback years later will need sales recorded on a register ... *run by Salvo?*
4. Trade definition of takeback - sold by one dealer, taken back by any TR dealer? *Consult*
5. Takeback USA dealer: 'Yes, if the wood returns in similar good shape as when it was sold. No, if the wood was glued down or damaged during a particular use.' *Salvo consultation*
6. Takeback: 'Reuse of some materials e.g. temporary hoardings which may only be in use for a few months. But other elements e.g. kitchens in homes have a 10 year design life. A takeback scheme is a good idea. Contractor removing would be different from those who installed. Would need information sharing.'
7. Respondent: 'Regarding takeback: No. Takeback is wrong term because it typically involves the material being taken back by the original supplier (e.g. Knauf insulation, British Gypsum plasterboard etc). New timber should not be over-ordered. Only timber 'waste' is offcuts which can be suitable for reuse. However, when it leaves site it is then usually 'waste' and does not have CoC. Also, some clients do not want any secondhand material.'
8. Respondent: 'There is an issue with the Government definition of 'legal and sustainable' as it only includes reclaimed material (abandoned or confiscated) if more than 10 years old and evidence is required. How will this link with BREEAM if it is a driver for this but only deals with responsible sourcing whereas the focus should be on circular economy. UKCG disagree with BREEAM one way is responsible sourcing managed. BREEAM requirements very different to FSC and PEFC and to UK government 'legal and sustainable'.
9. Respondent: 'A takeback scheme is a good idea. Ties in to the circular economy. However, it depends on quality and design of element/material/product, is it designed for its intended new life? Information provided with it, the contract in place. Example of circular building in the Netherlands: structural glulam beams - had an agreement with manufacturer or supplier to buy them back after 20 years. However in order for this to work, the supplier suggested sizing for uses which would be more saleable in the future. The product has a material passport which includes information for intended second life.'

Have been working with a university looking at how door frames can be taken out and reused. Reclamation and reuse are currently somewhat important but in future would be very.'

10. Respondent: 'Takeback: neutral on a takeback - difficult to get a takeback scheme to work - eg reuse of pallets. Not economically viable, may be H&S or fire risks, eg number of pallets that can be stacked on site and fire risks.'
11. Respondent: 'Major UK conservation organisation: 'History was important. Encourage samesite reuse. Should reuse old timber because it's a good material. Ensure it is salvaged in property - provenance is important e.g. scrap metal. Medieval age timber upwards can survive for hundreds of years. Takeback scheme is a good idea.'

## More long term topics

### Ageing

A respondent wrote: 'customers are not bothered about ageing newer reclaimed wood to make it look older'. *Salvo research should there be an 'artificially aged' label? how would it work? what would it mean?*

### Client-led reuse

South East England architects practice: 'Reuse of reclaimed is client-led' *Salvo research percentage?*

### Demolition sector

1. The UK (and other?) demolition sectors need a policy of fairness on supply to reclamation dealers of reclaimed building material. Also arrangements for supplies to stockholding reclamation dealers which allow transparency without the source exposure allowing competitors to outbid. *Salvo research.*
2. Demolition moved away from human dismantling towards machine demolition. No deaths reported while timber is being reclaimed by hand in London, but plenty by machine demolition. *Salvo discuss with demo trade and H&SE?*
3. Unfair competition from businesses (schijnzelfstandigen) not paying social costs/tax *osd*
4. Cash payments required by demolition contractors. *Salvo trade consultation osd*

### Fake reclaimed

1. Unfair competition from manufacturers of both visual lookalikes and similar names as reclaimed, for example 'Boomse Recup' (reclaimed pantiles) from Wienerberger and others. *Salvo to suggest consumer and ESG investor boycott? osd*
2. Major developer: 'Reclamation and reuse are very important, increasingly for embodied carbon and BREEAM. Ease of procurement and security of supply are big issues. Important to make sure that timber is actually 'reclaimed' and not new wood supplier is calling reclaimed as a 'cover' that has no chain of custody' *Salvo: is this fake reclaimed or SoS?*

## **Funding Salvo to roll out TR**

If TR scheme is self-funding it is likely to start slow with eventual impact taking years - are there any grants available to help Salvo roll this out? *Salvo research.*

## **Hospitality and retail sectors**

1. Raise awareness of TR in hospitality and retail and explain the benefits of genuine reclamation to increasing customers. *Salvo market research feedback from H&R customers.*
2. A respondent wrote: 'History is not important to customers, but saving from the waste stream is more important and reducing use of virgin timber and carbon footprint' *Salvo research needed: what is more important to which sector - history or eco-benefits?*
3. UK retail trade body (500 members): 'History was not of interest to members but for materials arising from a fit-out, the SKA rating scheme encourages reuse as a first option, with the next option avoidance of landfill, which is usually energy recovery. Average life of a scheme is 10 years before removal, so a takeback scheme is a good idea. Reclamation and reuse are extremely important, but not for our members where economics drives the business, sustainability is not important, they are only interested if it will win them more business or if it saves them money. Assurance that reclaimed wood is genuine is not so important - members will know if it is reclaimed or not. New wood made to look like old will look, smell and feel different. TR is definitely not a good idea'. *Salvo research - retail might buy reclaimed, but does not want to reuse?*

## **Infosheets - linked from QR code**

1. Costs and prices can be included if requested by the supplier. *Include?*
2. Past and recent history, provenance, chain of custody - could include the original source of the material, its manufacture, the original building of installation, the history of that building, the demolition, cleaning process, restoration and repair, storage, packaging, supply transport - looking at social, economic and environmental factors. *Include?*

## **Policing**

Respondent: 'TR needs careful policing to avoid abuse by other dealers using TR incorrectly or fraudulently. *Salvo and peers to police? Secret shoppers?*

## **Prices**

1. Respondent: 'Neutral on paying more for TR. Depends how much more and also the volume required and its use. For example in uses where material hidden (partition walls) would probably not pay a premium but in visible parts more likely.' *Salvo avoids discussions on prices - should it?*
2. *Respondent:* 'For TR to work at scale it would need to be cheaper and clients would not expect to pay a premium. Ease of procurement: Very important for contractor. Material with correct performance requirement (e.g. species, stress grading etc) needs to be

available at right time. Timescales often short to source materials and have them delivered to site in time for building programme to avoid costly time penalties. So, usually new is better as it can be produced as required in volumes needed. (This is also a problem for homegrown suppliers as do not have sufficient stock). We reuse reclaimed where required by client. Usually just materials for temporary use e.g. scaffold planks and hoardings.' *Salvo - is this more a price issue or SoS?*

### **Procurement of Truly Reclaimed items**

1. Respondent: 'Procurement by very large business: 'we only use two new timber suppliers which have undergone a thorough audit trail - we probably do not want to deal with lots of small companies - even though reclamation and reuse are very important to us'. *Salvo research and discussions needed - find solutions?*

2. Respondent: 'TR should add rigour to upstream procurement, business collaboration, coaching, and downstream chain of custody to assure institutional customers and contractors. *Salvo - how this can be enhanced? (jandebash)*

### **Reclamation trade**

Respondent: 'Is it true that larger businesses were more enthusiastic about TR label than smaller ones?' *Salvo research.*

### **Recycling and downcycling**

Recycling and downcycling should be a last resort, as per the waste hierarchy. At present recycling or downcycling is the first resort in UK. The change impacted the UK reclaimed building materials sector which had been supported by government in the 1990s was considered by Salvo to be the best in the developed world at the time. *Salvo research.*

### **Regulatory authorities - UK gov DEFRA? - cross departmental? Public sector disposals and procurement of reclamation and reuse - upstream and downstream.**

Disposal and procurement by the public sector - reclamation and reuse should either be mandated, or voluntary targets adopted, to outperform the national average by a large margin - the stats for the national average in 28 categories will be available in 2022. It will not work simply telling others to reuse reclaimable items which procurers themselves disdain. This may be more a UK&IE problem than an issue in north-west Europe where public sector projects drive reclamation and reuse. *Salvo action, also IE*

### **Regulatory authorities - UK Environment Agency**

1. If there is not a 'low risk waste position' for demolition salvage one should be created - quoted by an EA expert in the market research. *Salvo action, also IE*
2. 'Government should regulate demolition time penalties by enforcing the 2011 Waste Regulations.' *Salvo spoke to EA (2014/15) which said it would take enforcement action against transgressors but needed evidence. Trade will not give evidence because they would be ostracised by demolition contractors. Salvo to discuss with demo, dealers and EA*

3. Respondent: 'Reclaimable demolition wood is damaged by machines and then sold by the container-load. Where does this go? China to be turned into reclaimed wood furniture which is then imported back into Europe or USA? Or used as RDF? So demo contractor cannot comply with 2011 Waste Regs'. *Salvo to discuss with stakeholders.*

### **Regulatory authorities - UK government and NFDC**

The UK demolition sector has reduced reclamation and reuse compared to its peak in the mid 1990s. Various factors were mentioned in the market research: faster demolition contracts imposed by society, health and safety issues, lack of demand, increasing mechanisation and reduced hand labour, pricing out of profits, lack of storage space, uncertainty of markets - all of which need rationalising with help from regulators and demolition sector. More than one respondent wrote that 'most reclaimable material is mechanically removed, torn out of buildings by machine, and not suitable for reuse' - research is needed on the demolition sector's approach and future vision. *Salvo research, also IE.*

### **Rules**

1. Mixed new/old/recraft/upcycled: If a product is mixed, for example 90% new and 10% TR, can it still have the Truly Reclaimed label? *Salvo trade consultation*
2. TR label must allow trusted dealers to self-certify quality that the reclaimed material has not been stolen or removed from protected buildings without consent? *Salvo Code agreed by TR dealers.*

### **Site2site salvage**

Local authority: 'Don't have the capacity within the council to take wood from our demolition and refurb works to then sort and store for reuse in our building projects. Would like to do this but don't see it as our role. Need private suppliers to do this. At the moment the waste wood generated is left with the building/demolition contractor'. *Salvo to research LAs*

### **Truly Reclaimed label size and visibility**

1. Respondent: 'Visibility is important for TR. It could be stamped on products in same way as FSC is. However, always needs to be a paper trail for auditing (internally and externally) in same way as GiB or FSC. There needs to be a claim on the delivery ticket which can be looked at on the website. Suggest this is quite 'niche' as reclamation takes up space and there are issues with transportation and logistics'. *Salvo trade consult - may need a unique batch ID as well the TR label and QR code?*
2. Respondent: 'A trial in a few DIY stores could be organised by Salvo to show a few stocks of locally available TR reclaimed material in UK and Irish DIY super stores.' *Salvo action.*



## Conclusion

A driver of the growth of the architectural salvage sector in the 1970s was resource conservation when buildings were being demolished. As the sector matured and the threat of climate change became evident to many, reasons began to include 'to save energy' and by the 1990s to save 'embodied energy'.<sup>10</sup>

The salvage sector expanded from and peaked in the UK<sup>11</sup> in 1998 at around 2% of the UK construction materials market measured by mass and value. It then began a gradual decline to nearer 1% by mass and volume by 2007. The decline came at a time when the construction sector and its institutions backed recycling instead of reuse. The salvage trade consequently invented<sup>12</sup> the terms 'downcycling' which reduced or destroyed embodied energy, and upcycling which preserved the embodied energy and increased the value.

For five decades that small percentage role of the architectural reclamation sector in helping to reduce carbon emissions went unnoticed by government and policymakers, possibly because it was not measured.

The publication of UN sustainable development goals and the increasing levels of discussion in 2021 about the circular economy seem a reclaimed pathway down which enlightened mainstream constructors would progress toward abandoning downcycling and adopting more reuse.

Some new construction material is made to imitate the look of reclaimed building material. This deceit decreases reclamation and reuse of genuine reclaimed material. For example, new brick suppliers in the UK and other EU countries describe advertise many new bricks as

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<sup>10</sup> Author's earlier publications, eg Salvo 93 directory of dealers, and James Simpson of Simpson & Brown in AECB magazine and SalvoNEWS Sept 1997: 'Old buildings should be audited for their embodied energy before being unceremoniously knocked over.'

<sup>11</sup> See *BigREc in the glossary* ... the percentage seems to hold good by mass, volume and value so when targets are set Salvo suggests that any measure would be acceptable. Mass is the default measure for futuREuse in 2021, but after MRA is adopted embodied carbon should become the standard measure (*author's comment*)

<sup>12</sup> The terms *upcycling* and *downcycling* were first used in print in an article in SalvoNEWS by Thornton Kay quoting Reiner Pilz and published in 1994. <https://en.wikipedia.org/wiki/Upcycling>



*Above: New bricks that look like reclaimed bricks. Brick makers have many ranges of bricks made to persuade a professional specifier to use them because they look eco-friendly. This results in billions of genuine old reusable bricks not being saved and reused.*

'reclaimed' or 'antique' or similar, and new brick reclaimed lookalikes are distressed to visually imitate genuine reclaimed bricks.

The use of LCA, EPDs and PCRs, does not factor in lost embodied carbon and sequestration in material that is demolished and not salvaged, and allows architects and specifiers to continue specifying new lookalikes. The argument is not that the use of new material is wrong, but that as much as possible we should reuse the old before we make new. The burning of fossil fuel should be a last resort, not the first option. Every new building should contain at least the average percentage of reclaimed material, not as a token gesture, but meaningfully as part of the structure or a social reminder of the past - in other words buildings are best when they consider both environmental and social impacts, for example in Bill Dunster's BedZed. We hope that Salvo's work in helping to resolve some of the foregoing issues may contribute to increasing reclamation and reuse further, and reduce carbon emissions.

## Target groups

FCRBE project partners for discussion and comment.

Subsequent target groups (as per partnership agreement) will be:

- Sub-national entities (such as regions, counties, provinces) responsible for reuse
- National public authorities in responsible for reuse
- Students of architecture
- Demolition and construction contractors
- SMEs active in the circulation of reclaimed construction elements, specifically the 1,500 dealers in the FCRBE directory.
- Sectoral federations and research centres active in the construction industry
- General public
- Local authorities
- Environmental agencies
- Vocational education for construction professionals

- Architects, designers and large building commissioners

## Salvo Ltd - terms and disclaimer

### **Salvo Ltd disclaims liability arising from, or reliance on, the Truly Reclaimed scheme.**

We aim to require unannounced spot checks, secret buyers and secret sellers, to test the Truly Reclaimed system. Trust is the key to the Salvo Code which has been in operation administered by Salvo since 1995. This will be the same for the Truly Reclaimed scheme. However, it does not seem possible to create a provenance verification system that is infallible. Salvo will regulate and administrate it, relying on its own diligence, peer reviewing by Salvo members, and reports from others.

## With thanks to ...

With thanks for help, interviews and organising to:

24 Apr 2019	Belgian study day: Arne Vande Capelle, Lionel Billet, Lionel Devlieger, Maarten Gielen, Opalis, Rotor
2015/16	Interviews by BRE: Gilli Hobbs, Katherine Adams
22/23 Feb 2020	Hingham Workshop: Becky Moles, Faye Thorley, Louise Coster, Sam Coster, Sara Morel, Thornton Kay, White Hart

With thanks to the following contributing people and businesses:

Andrew Keynon  
Andy Newton (TR workshop)  
Andy Triplow (TR workshop)  
Anthony Swaine Architecture  
Architectural Forum (TR visit)  
Ashwell Reclaimed Timber (TR visit, help with launch)  
BAM Construct  
BCA (TR phone, help with launch)  
Between Time  
Bob Lovell (TR visit, help with launch)  
BRE  
BREEAM  
Brad Guy  
Charlie Law  
Claire Fundrey  
Cumbria Architectural Salvage (TR visit)  
Dan Hide (TR workshop)  
Daniel Doran

David Ackers  
David Cox (TR workshop)  
Dave Bennink  
Dougal Driver  
Drummond Shaw (TR workshop)  
Drummonds Flooring (TR workshop)  
Eco-Products NI (TR visit)  
Environment Agency  
Eric Van Eynde (OSD)  
Fiona Triplow (TR workshop)  
FIS  
Forestry Commission  
Franck bv (OSD)  
Frank Sykes (TR workshop)  
FSC  
Furniture Reuse Network (now Reuse Network)  
Geert & Robrecht Van Hoecke (OSD)  
Gilli Hobbs  
Graham Winter  
Grown in Britain  
Hargreaves Reclaimed Flooring  
Harry Maharaj (TR visit)  
Henry White  
Hideaways  
Historic England  
Hofman nv (OSD)  
Howard Button  
ISG plc  
James Wilson (TR visit, Clive Wilson help with launch)  
Jan Franck (OSD)  
Janine Tutt  
Jason Davies (TR visit)  
Jesse Putzel  
Jo Hibbert  
Joe Cilia  
Julian Sims (TR workshop)  
Katherine Adams  
Keith Temple (TR visit)  
Keltbray Ltd  
Kevin Hulman  
Kevin Jennings (TR visit)  
Kilkenny Architectural Salvage (TR visit)

Koen Hofman (OSD)  
Koryn Steinbok  
Lee Skelton (TR visit)  
Levitate  
Louise Coster (TR workshop)  
Machells  
Maeve Sykes (TR workshop)  
Marieke Vandemoortel (OSD)  
Maris Natuursteen bv (OSD)  
Mark Jameson (TR visit)  
Mark Parsons  
Martin Bell (TR visit)  
Mike Worrell  
Mongers Architectural Salvage (TR workshop, help with launch)  
Morways (TR workshop)  
Naomi Cessford  
Neale Hargreaves  
NFDC  
No1 Lewes  
Olde Worlde Fireplaces (TR visit)  
Oladipo Okusaga  
Oxford Wood Recycling  
Parsons Building Maintenance  
Peter Kelly  
Purcell Architects  
Real Original (TR workshop)  
Reuse Consulting  
Richard Jameson (TR visit)  
Richard Mehmet  
Richard Snow  
Robin Robertson  
Rolph Van Dijk (OSD)  
Rowan Lloyd  
Sam Coster (TR workshop, help with launch)  
Simon Rowley  
Sophie Godfraind  
Stephen Langer Architecture  
Steve Cook  
Stiffkey Bathrooms (TR workshop)  
Teesside Architectural Salvage (TR visit)  
The Oak Flooring Co Ltd (TR visit, help with launch)  
The Old Radiator Company (TR workshop)

Tracy Perry-Rutt  
Trinity Marine (TR visit)  
Timber Trade Federation  
UK govt, dept of BEIS (businesses, energy and industrial strategy)  
UKAA (TR workshop)  
Vandemoortel Rustieke Bouwmaterialen (OSD)  
Van Dijck SA (OSD)  
Viv Newton (TR workshop)  
Westvlaamse Steencentrale nv (OSD)  
Wilmott Dixon  
WRAP  
WRS Ltd (TR visit, help with launch)

501 reclamation dealers visited, emailed, phoned, interviewed 2019-2021 in UK and Ireland

(OSD) - Opalis Study Day, Grimbergen 24apr2019

(TR workshop) - attended the Truly Reclaimed label workshop held in Norfolk 22/23 Feb 2020

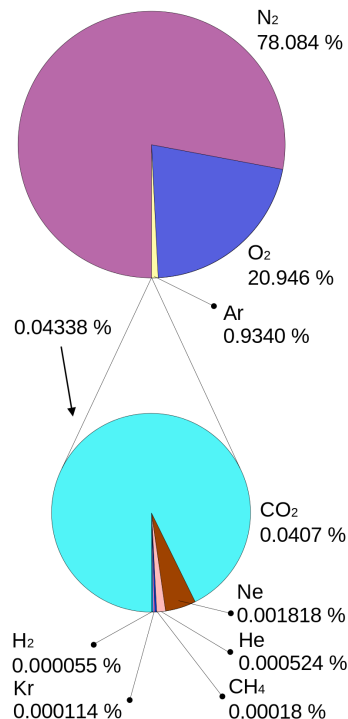
(TR visit) - mostly during visits to yards in connection with WPT1A1)

## Glossary

**antique** - legal definition meaning more than 100 years old (UK), or more than 50 years old (USA)

**architectural salvage** - 1 the trading sector of dealers in secondhand building material and products; 2 secondhand building material and products, sometimes interchangeably with 'reclaimed building material' but usually for specific previously used single construction products, often of mixed material and usually subject to secondary manufacturing, such as a bath, staircase or window. The description is best applied to generally (but not exclusively) antique or reclaimed items used individually and incorporated as a fitting, fixture, element of structure, coverings, fixtures, fittings, utility or decoration of a building or landscape. The singular of the word, material, may be used to describe the singular or plural, for example - those heaps of different types of reclaimed setts are all reclaimed building material. (*see - reclamation*)

**atmosphere** - nitrogen, oxygen and greenhouse gases - carbon dioxide, methane, nitrous oxide and others [<https://climate.nasa.gov/news/2915/the-atmosphere-getting-a-handle-on-carbon-dioxide/>]



**BigRec surveys, BigREc** - Salvo undertook two national surveys of reclamation and reuse, funded by UK gov, managed by BRE, in 1998 and 2007 which showed that reclaimed building material was 2% in 1998 falling to 1% in 2007. The same low percentage, or even less, is reused in most European countries, with Scandinavia and northern Europe least, southern Europe and Mediterranean average, and north west Europe: Belgium, France, Ireland, Netherlands and UK highest in terms of mass and value (author's comment).

**biogenic carbon** - plants capture carbon dioxide, CO<sub>2</sub>, in the process of photosynthesis, store it in biomass (living and dead), biologically sequester it into long-term stores in the wood of trees

and soil; the biogenic terrestrial carbon cycle helps reduce greenhouse gas emissions; dry timber contains approximately 50% biogenic carbon by mass; *see - sequestration*

**biosphere** - the surface, atmosphere, and hydrosphere of the earth occupied by living organisms

**carbon benefit** - is a phrase first seen in the 1990s to describe physical carbon sequestered in biomass and soil in forestry, in tropical rainforests, and the Amazon in particular. Carbon benefit then shifted to mean environmental benefit in the 2000s as a term in the new language of the LCA practitioner, generally as an indication that one LCA option had more 'carbon benefit', the implication was that the preferred option emitted fewer emissions. Emissions *per se* are not the whole issue, because without CO<sub>2</sub> emissions there would be no life on earth, but the real issue is the ability of the planet to continue to sequester excess CO<sub>2</sub> - the planet's remaining sequestration capacity. Past emissions have still not been sequestered, but are visually evident in two ways: the built environment, particularly from the 1770s onwards, not just buildings but built infrastructure - roads, canals, railways, airports - are stored past emissions, containing notional embodied carbon; the other visual evidence is climate change - damage from storms, floods, food shortage from drought, brought about due to molecular CO<sub>2</sub> being more than 400ppm. Salvo's view is that 'carbon benefit' actually means 'any action which increases the capacity of planet earth to sequester more CO<sub>2</sub>'. The list of these actions (not in order of importance) includes decarbonising, creating permanent new forests, reducing personal carbon footprints, eating less meat and dairy products, reusing buildings and, when demolition is unavoidable, assiduously reclaiming and reusing reclaimed building materials to preserve their embodied carbon. Reversing these actions spells trouble for life on the planet - deforestation, 2 to 12 planet living, eating more meat, and crushing demolished building materials. The developed world has the highest carbon footprint, eats the most meat, and destroys the most reclaimable building materials - this means the UK and Europe.

**carbon sequestration** - *see sequestration*

**circular economy** - 'a circular economy is based on the principles of designing out waste and pollution, keeping products and material in use, and regenerating natural systems' (Ellen MacArthur) The term is not clearly defined. Policies usually conflate 'reuse' and 'recycling' in the single term 'recycle and reuse'. Salvo and other environmentalists believe reuse to be the best option because it conserves embodied carbon. In reality it seems that 'circular economies' may reuse less than 2% and recycle (= destroy the embodied energy if the material or product could be reused) more than 90%. Recycling is usually downcycling, such as crushing old bricks, which results not only in loss of their embodied energy, but the added loss of carbon emitted by the fossil fuel-powered crushers. 'Recycling is the least profitable and sustainable strategy of the circular economy. The 2008 EU Waste Framework Directive is the better approach, with priority for reuse followed by service-life extension and preparation for reuse before recycling.'<sup>13</sup> Walter Stahel (also see reuse economy). The *EU 2020 A new Circular Economy Action Plan* states:  
3.6. Construction and buildings. The built environment has a significant impact on many sectors of the economy, on local jobs and quality of life. It requires vast amounts of resources and

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<sup>13</sup> [https://ec.europa.eu/environment/ecoap/about-eco-innovation/experts-interviews/reuse-is-the-key-to-the-circular-economy\\_en](https://ec.europa.eu/environment/ecoap/about-eco-innovation/experts-interviews/reuse-is-the-key-to-the-circular-economy_en) Professor Walter Stahel, 2013, 'Reuse is the key to the circular economy' Product Life Institute, Geneva <http://product-life.org>



accounts for about 50% of all extracted material. The construction sector is responsible for over 35% of the EU's total waste generation

32. Greenhouse gas emissions from material extraction, manufacturing of construction products, construction and renovation of buildings are estimated at 5-12% of total national GHG emissions

33. Greater material efficiency could save 80% of those emissions

34. To exploit the potential for increasing material efficiency and reducing climate impacts, the Commission will launch a new comprehensive Strategy for a Sustainable Built Environment. This Strategy will ensure coherence across the relevant policy areas such as climate, energy and resource efficiency, management of construction and demolition waste, accessibility, digitalisation and skills. It will promote circularity principles throughout the lifecycle of buildings by -

- addressing the sustainability performance of construction products in the context of the revision of the Construction Product Regulation including the possible introduction of recycled content requirements for certain construction products, taking into account their safety and functionality;
- promoting measures to improve the durability and adaptability of built assets in line with the circular economy principles for buildings design and developing digital logbooks for buildings;
- using Level(s) to integrate life cycle assessment in public procurement and the EU sustainable finance framework and exploring the appropriateness of setting of carbon reduction targets and the potential of carbon storage;
- considering a revision of material recovery targets set in EU legislation for construction and demolition waste and its material-specific fractions;
- promoting initiatives to reduce soil sealing, rehabilitate abandoned or contaminated brownfields and increase the safe, sustainable and circular use of excavated soils.

Furthermore, the 'Renovation Wave' initiative announced in the European Green Deal to lead to significant improvements in energy efficiency in the EU will be implemented in line with circular economy principles, notably optimised lifecycle performance, and longer life expectancy of build assets. As part of the revision of the recovery targets for construction and demolition waste, the Commission will pay special attention to insulation materials, which generate a growing waste stream.

**CO<sub>2</sub>, carbon dioxide** - the biggest greenhouse gas which absorbs and stores solar heat reflected off the Earth's surface. Between 65-80% of CO<sub>2</sub> released into the air dissolves into the ocean over a period of 20-200 years. The remainder may take several hundreds of thousands of years, by the action of chemical weathering and rock formation. Once in the atmosphere, carbon dioxide can continue to affect climate for thousands of years.

**CO<sub>2</sub>e, carbon dioxide equivalent** - the global warming impact of mixtures of greenhouse gas as an equivalent amount of carbon dioxide that would create the same amount of warming. Carbon emissions consisting of different greenhouse gases can be expressed as a single number. In 2009, the UK emitted 474 million tonnes of CO<sub>2</sub>, but if emissions of methane, nitrous oxide and F-gases are added, the UK's total emissions worked out at 566mtCO<sub>2</sub>e - the equivalent of an additional 92mt of CO<sub>2</sub>. The conversion factor 1.194 is multiplied by the mass of CO<sub>2</sub> to give the mass of CO<sub>2</sub>e, where the mass is usually measured in tonnes or kilograms. The UNFCCC states

that 'GHG emissions/removals can be expressed either in physical units (such as grams, tonnes, etc.) or in terms of CO<sub>2</sub> equivalent (grams CO<sub>2</sub> equivalent, tonnes CO<sub>2</sub> equivalent, etc.). The conversion factor from physical units to CO<sub>2</sub> equivalent is the GWP of the corresponding GHG. If X Gg/kt of CH<sub>4</sub> is to be expressed in terms of CO<sub>2</sub> equivalent, then it is multiplied by the GWP of CH<sub>4</sub> over 100 years timescale, which is 21 or 25 (depending on the group of Party).'

**embodied carbon, ee, embodied energy, acquired carbon** - 'acquired' carbon that has been notionally assigned to a material or product from the sum in kgsCO<sub>2</sub>e of the emissions of fossil fuel energy required to produce, reclaim, transport, use, reuse, build and maintain a material or product; the use of the term 'embodied' for acquired energy is a misnomer because the English language definition of embody is to 'include or contain something as a constituent part' - thus 'sequestered carbon' or 'biogenic carbon' in wood should really be 'embodied carbon', and 'embodied carbon' would be better renamed 'associated carbon' or 'accredited carbon' or 'acquired carbon' and better still 'acquired fossil fuel carbon' because in the context of MRA and LCA only the fossil fuel energy is considered as embodied because only the fossil fuel energy which creates carbon emissions contributes to climate change.

**EPD environmental product declaration** - is defined by International Organization for Standardization (ISO) 14025 as a Type III declaration that quantifies environmental information on the life cycle of a product to enable comparisons between products fulfilling the same function. The EPD methodology is based on the Life Cycle Assessment (LCA) tool that follows ISO series 14040. EPDs are primarily intended to facilitate business-to-business transactions, although they may also be of benefit to consumers who are environmentally focused when choosing goods or services. Companies pay for EPDs to publicise the sustainability goals of their products and services, to demonstrate commitment to the environment to customers. The EPD analysis covers actual impacts of lifecycle classes A1 to A3 (*see table below*) with estimated predicted impacts for the rest of the cycle normally carried out once (although iteration is recommended) for new products because they hinge on data obtained during the manufacturing process. Third party verification is needed for EPDs, and they normally cost around £2,000-£5,000 each, for up to 50 pages of data, and they only last for 5-10 years.

**ETS emissions trading scheme** - set up by the EU to measure, trade in, and gradually reduce carbon emissions; for major fossil fuel energy producers and industrial users which are given a carbon allowances; excess carbon allowances are then sold to companies which overspend their allocated carbon budgets, using a floor price for carbon arbitrarily set by the EU; reclamation businesses are not eligible despite saving carbon emissions and paying additional taxes on fuel they use, in effect subsidising big emitters such as brick makers whose output might include 40% fake reclaimed bricks - an unlevel playing field which might increase climate change (*see C4 in the table below*)

**functional reuse** - reuse of reclaimed building material for permanent longer term constructional purposes, for example, using reclaimed greenheart timbers as a Caribbean house frame per Ashwell's or reclaimed loosework as a steel frame per Bedzed; functional reuse may be considered in contrast to less permanent surface cladding which might be removed when fashions change such as flooring, ceiling or wall cladding in a restaurant, or purely decorative reuse including art installations made from reclaimed.

**LCA, life cycle assessment or analysis** - a procedure developed for calculating the environmental impact of the single life of a material or product. The LCA process includes its goal and scope definition, inventory analysis, impact assessment, and interpretation. The process should be iterative as the quality and completeness of information and its plausibility is constantly being tested. [ <http://www.athenasmil.org/resources/about-lca/whats-the-difference/> retrieved 30mar21tk]

**LCA iteration** - successive refinements of the precision of an LCA study. Provisions for the iterative approach to LCA (an iterative approach is recommended):

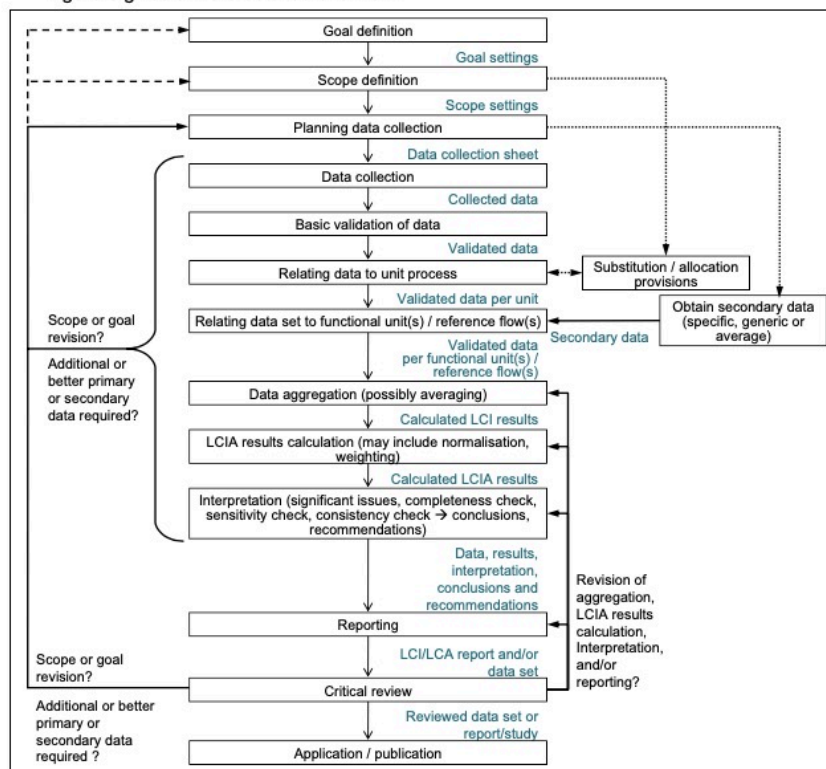
- a. Define the LCA goal as precisely as possible at the beginning of the LCA study
- b. Derive an LCA scope definition from the LCA goal as far as initial knowledge permits
- c. Compile easily available LCI data for the foreground and background system. Model the process or system (e.g. product) as far as the initial information and data permits
- d. Calculate the LCIA results
- e. Identify significant issues and perform first sensitivity, consistency and completeness checks on the initial model
- f. Based on this go to the next iteration: Start with fine-tuning or revising the scope (in some cases even the goal), improve the life cycle model accordingly, etc.
- g. Expect two to four iterations towards completing the study. This will mainly depend on the quality needs or ambition, the complexity of the analysed process(es) or system(s), on the specifically analysed question(s), and data availability and its quality. [ISO+]
- h. Starting from the beginning of the study, document the details of the initial goal and scope definition, key LCI and LCIA items, and the key initial results of the sensitivity, consistency and completeness checks. Let this be guided by the main provisions of reporting required for the deliverable. During subsequent iterations, use this preliminary core report as work in progress and constantly revise, fine- tune and complete it towards the final report (be it a data set and/or a study report).
- i. identify and involve critical reviewer(s) and - if required or desired - interested parties, including when defining goal and scope

All these provisions refer especially to the system(s) modelled under Situation B (i.e. for meso / macro-level decision support studies) [see iteration process in Figure 5 from ILCD below]

**LCA life cycle** - the normal system life cycle for new products is classed as A for creating material through extraction, manufacture and build; B for the life of the building including repairs and alterations; C is end of life ('end of first life' or 'end of current life' in the linear economy LCA) apart from life cycle class C3 which exports material outside the system boundary to class D which treats reuse, recycling, and waste to energy equally. This accords with circular economy principles, but does not work in the reuse economy which assigns a hierarchy with the top option being reuse, followed by recycling and waste to energy.

**LCA modelling** - this can be attributional or consequential. Attributional modelling attributes inputs and outputs to the functional unit of a product system by linking and/or partitioning the unit processes of the system according to a normative rule. Consequential modelling links activities in a product system which are expected to change as a consequence of a change in demand for the functional unit.

Figure 5 gives a more detailed overview.



**Figure 5** Details of the iterative approach to LCA, with focus on inventory data collection and modelling (from ISO 14044:2006, modified).

**LCA scope** - following the goal, the scope outlines the information included in the study. Unlike the goal, which may only include a few sentences, the scope often requires multiple pages to describe the detail and depth of the study and demonstrate that the goal can be achieved within the stated limitations. Under the ISO LCA guidelines the defined goal precedes the scope that the study should outline. For example, if the defined goal is to find the carbon benefit of reclaiming and reusing bricks and the scope is stocks of reclaimed bricks in salvage yards the study should outline:

- product system - A (repeated life/end of life/reclamation cycles) - or - B (reclaimed bricks in stock in a salvage yard which does not seem correct because until the bricks have been reused the carbon benefit or savings have not been achieved) process that transforms inputs to outputs within the system boundary
- functional unit - A (reclaimed bricks) - or - B (1m<sup>2</sup> section of a reclaimed brick wall) The functional unit enables different systems to be treated as functionally equivalent. It may answer the questions: what? A (1 brick, 1 pallet of 350 bricks, 1 truckload of 7,000 bricks) how much? for how long? how many times? where? how well? (tk: see pink panel from ICLD below for comparative errors to avoid - does this prevents comparison of old bricks with new bricks in LCA because the functional units are different? Can the functional unit be kgCO<sub>2e</sub>, a single brick, a batch of bricks, or a wall made from reclaimed bricks?)

- reference flow - A (brick mass in kg) - or B ( is the amount of product or energy of the functional unit.
- LCA boundary, aka system boundary - (from manufacture to the end of all lives) - or - (manufacture/use/reclamation yard)
- assumptions and limitations - includes any which may influence the final results. Omission may result in misinterpretation of the results. Additional assumptions and limitations made throughout the project should be recorded
- Data Quality Requirements, which specify the kinds of data that will be included and what restrictions. According to ISO 14044, the following data quality considerations should be documented in the scope:
  - Temporal Coverage
  - Geographical Coverage
  - Technological Coverage
  - Precision, completeness, and representativeness of the data
  - Consistency and reproducibility of the methods used in the study
  - Sources of Data
  - Uncertainty of information and any recognized data gaps
- Allocation Procedure, which is used to partition the inputs and outputs of a product and is necessary for processes that produce multiple products, or co-products. This is also known as multifunctionality of a product system. ISO 14044 presents a hierarchy of solutions to deal with multifunctionality issues, as the choice of allocation method for co-products can significantly impact results of an LCA. The hierarchy methods are as follows:
  - Avoid Allocation by Sub-Division - this method attempts to disaggregate the unit process into smaller sub-processes in order to separate the production of the product from the production of the co-product
  - Avoid Allocation through System Expansion (or substitution) - this method attempts to expand the process of the co-product with the most likely way of providing the secondary function of the determining product (or reference product). In other words, by expanding the system of the co-product in the most likely alternative way of producing the co-product independently (System 2). The impacts resulting from the alternative way of producing the co-product (System 2) are then subtracted from the determining product to isolate the impacts in System 1
  - Allocation (or partition) based on Physical Relationship - this method attempts to divide inputs and outputs and allocate them based on physical relationships between the products (e.g. mass, energy-use, etc.).
  - Allocation (or partition) based on Other Relationship (non-physical) - this method attempts to divide inputs and outputs and allocate them based on non-physical relationships (e.g. economic value).
- Impact Assessment, which includes an outline of the impact categories identified under interest for the study, and the selected methodology used to calculate the respective impacts. Specifically, life cycle inventory data is translated into environmental impact scores, which might include such categories as human toxicity, smog, global warming, and

eutrophication. As part of the scope, only an overview needs to be provided, as the main analysis on the impact categories is discussed in the Life Cycle Impact Assessment (LCIA) phase of the study.

- **Documentation of Data**, which is the explicit documentation of the inputs/outputs (individual flows) used within the study. This is necessary as most analyses do not consider all inputs and outputs of a product system, so this provides the audience with a transparent representation of the selected data. It also provides transparency for why the system boundary, product system, functional unit, etc. was chosen.

**LCA study** - method of analysing and quantifying the mainly CO<sub>2</sub>e emission impacts of a product or service. Although the LCA study normally focuses on environmental impacts it sometimes includes social and economic impacts.

	linear economy	circular economy	reuse economy	carbon sequestered by reuse	need to measure carbon benefit
<b>life cycle class</b>	c r a d l e		see class E		
<b>A1</b>	raw material	raw material	reclaimed material	high CO <sub>2</sub> e savings	high
<b>A2</b>	transport to plant	transport to plant	transport to local plant	medium CO <sub>2</sub> e savings	medium
<b>A3</b>	manufacture	manufacture	clean & process	high CO <sub>2</sub> e savings	high
	g a t e				
<b>EPD</b>	EPD	EPD			
<b>A4</b>	transport to site	transport to site	transport to site	medium CO <sub>2</sub> e savings	high/medium
<b>A5</b>	build	build	innovative reuse	medium CO <sub>2</sub> e savings	high/medium
<b>B1 use phase</b>	life of building	life of building	life of building	medium CO <sub>2</sub> e savings	
<b>B2</b>	maintenance	maintenance	maintenance	small impact	
<b>B3</b>	repair	repair	repair	small impact	
<b>B4</b>	replacement	replacement	repair & adapt	small/med. impact	medium
<b>B5</b>	refurbishment	refurbishment	repair & adapt	small/med. impact	medium

<b>C1</b>	fastest de-molition	fast demolition	slow dismantling	<b>high CO2e savings</b>	high
<b>C2</b>	to disposal	to disposal	to salvage yard	<b>high CO2e savings</b>	high
<b>C3</b>	waste	waste/downcycle	prepare for reuse	<b>high CO2e savings</b>	high
<b>C4</b>	disposal landfill	disposal probably	monetise	<b>ETS ??</b>	high
<b>D</b>	emissions lost	emissions lost	emissions saved	<b>high CO2e savings</b>	high
<b>E return to A1 raw mat phase</b>	no carbon sequestered	low carbon sequestered	high carbon sequestered		high
<b>CO2e</b>	no change in impacts on material	impacts down 0% to 10% recycle material	<b>impacts down 90% reusing material</b>		high
	<b>linear economy</b>	<b>circular economy</b>	<b>reuse economy</b>	<b>carbon sequestered by reuse</b>	<b>need to measure carbon benefit</b>

**LCC life cycle costing** - another life cycle approach (i.e, cradle to grave) but it looks at the direct monetary costs involved with a product or service and not environmental impact.<sup>14</sup>

**LCI life cycle inventory** - the data collection portion of LCA. It consists of detailed tracking of all flows in and out of the product system, including raw resources or material, energy by type, water, and emissions to air, water and land by specific substance. This kind of analysis can be extremely complex and may involve dozens of individual unit processes in a supply chain (e.g., the extraction of raw resources, various primary and secondary production processes, transportation, etc.) as well as hundreds of tracked substances.<sup>15</sup> The use of CO2e as units of measurement embraces a balloon of the worst greenhouse gas (GHG) emissions obviating the need for collecting LCI data when the goal is reducing GHGs.

**LCI foreground system** - system data can be specific, average, or generic. (Refers to aspects of ISO 14044:2006 chapters 4.2.3.3.2 and 4.3.2.1). Avoiding black-box unit processes. When aiming at collecting data for the identified processes within the system boundaries, aim should be to collect data for the actually required processes and not for agglomerates of these with other processes that are not required. This is important for accuracy of the data, for review reasons, as well as for avoiding multifunctionality problems that are otherwise unavoidable. This can be done by either collecting data exclusively for the required processes or, at least in some cases, by virtual subdivision of collected data, singling out the relevant inventory for the required function. *[see chapter 7.4.2.2 of ILCD handbook]*

<sup>14</sup> ibid

<sup>15</sup> ibid

**LCIA life cycle impact assessment** - the “what does it mean” step - the inventory is analysed for environmental impact. For example, manufacturing a product may consume a known volume of natural gas (this data is part of the inventory); in the LCIA phase, the global warming impact from combustion of that fuel is calculated. There are various methods globally for categorising and characterising the life cycle impact of the flows to and from the environment, which can somewhat complicate the comparability of different LCA studies. Other variables in LCIA include the system boundary (how far upstream, downstream and sidestream does the analysis go), the functional unit (what is the volume/mass/purpose of the object being assessed), and specific LCIA methods such as allocation (how are impacts assigned to the product and by-products, on what basis). When comparing two LCA studies, these factors are critical to understanding if the comparison is apples-to-apples.<sup>16</sup> LCIA is a step for evaluating the potential environmental impacts by converting the LCI results into specific impact indicators. Conducting LCIA has to follow several substeps: First is to select impact categories for analysis. The major impact categories are divided into three general groups in terms of impacting subjects (shown in Fig. 18.2). Second is to assign the LCI results to different impact categories (classification). Third, the potential impact indicators are calculated (characterisation). These three steps are mandatory for LCIA (*see illustration below*).

Ecosystem Impacts	Human Impacts	Resource Depletion
Climate Change Acid Rain Eutrophication Land Use Change Solid Waste Toxicity	Ozone Depletion Smog Particulate Matter Carcinogens Toxicity	Fossil Fuel Freshwater Soil Forest Grassland Minerals

Fig. 18.2. Major environmental impact categories.

**Linear economy** - an economy which buys new and throws away old material and products and contrasts with ‘circular economy’ which primarily downcycles reusable construction materials, and ‘reuse economy’ which primarily reuses reclaimable material and products

**PCR, product category rules** - enable comparison of products in the same category. PCRs include the description of the product category, the goal of the LCA, functional units, system boundaries, cut-off criteria, allocation rules, impact categories, information on the use phase, units, calculation procedures, and requirements for data quality. The goal of PCRs is to help develop EPDs for products that are comparable to others within a product category. ISO 14025 establishes the procedure for developing PCRs and the required content of a PCR, as well as requirements for comparability. Duplication in PCRs for similar products in different countries arises from the different purposes of the PCRs, the varying standards they were based on, or the use of different product categorization systems. Different interpretations of PCR's can cause variances in data reporting within a product category. However, EPDs that are effective require

<sup>16</sup> ibid



the use of standard factors in their formulation. Global harmonization of PCR and EPD standards remains a challenge. (*MRA alternative: RCR - reclamation category rules*)

**preparing for reuse** - EU institutional term meaning the traditional term 'reclamation'; first seen in the 2008 EU Waste Framework Directive in 2008, and reuse in waste legislation for example the 2011 Waste Regulations. *See reclamation*

**reclaimed building material** - the matter from which a building is made, a previously used basic construction component, usually a single type of natural or manufactured material such as fired clay, timber or stone, turned into products such as bricks, floorboards or setts. The description is best applied to generally heavy items which are bought in quantities for reuse as part or all of structures, coverings, fixtures, fittings, utility or decoration of a building or landscape. The singular of the word, material, may be used to describe the singular or plural, for example - those heaps of different types of reclaimed setts are all reclaimed building material. The word 'matter' is never plural. *Also - see reclamation*

**reclamation** - the entire process of the careful dismantling of part of a building, cleaning and repairing, storing and making available for reuse, building material, products or elements which are traditionally known as 'reclaimed building material' (since the 1950s) or 'architectural salvage' (since 1975) in British English. The process of reclamation is also known as deconstruction (mainly US), disassembly (mainly UK institutional), preparing for reuse (mainly EU institutional) and soft strip (mainly UK demolition trade).

**RCR reclamation category rules** - analogous to the 'product category rules' for new product

**recycle, recycling** - using old material or product as a feedstock for making a new recycled product, usually destroying the original material or product. Recycling can use fossil fuel energy for no environmental benefit - for example crushing reclaimable old bricks; after the first option of reuse, recycling is the second option in the waste hierarchy of best practice of three alternatives; reuse economy (reclamation is best), circular economy (recycling often wasteful), linear economy (worst).

**'recycle and reuse'** - a term now (2021) used by circular economists which generally means 'recycling not reusing' and destroying reclaimable materials. The phrase couples a very good environmental option with a very bad one. The phrase should be decoupled in every policy document and regulation because its use has destroyed millions of tonnes of reclaimable material in Europe, and the term 'circular economy' should be avoided. Instead the terms 'recycling economy' and 'reuse economy' should be defined and used. It would then become clear that 99% of reclaimable material is recycled, and only 1% reused, and the recycling comes at a huge additional carbon cost, in addition to the loss of embodied carbon. *Also see - circular economy.*

**reuse** - esp 'reclamation and reuse' and 'reuse of reclaimed building material' - salvage and use of a material or product as a whole, possibly for a purpose similar to its originally intended use; cf 'functional reuse' of reclaimed building material for permanent longer term constructional purposes, for example, using reclaimed greenheart timbers as a Caribbean house frame per Ashwell's or reclaimed loosework as a steel frame per Bedzed, in contrast to 'decorative reuse' of less permanent surface cladding which might be removed when fashions change such as

flooring, ceiling or wall cladding in a restaurant, or 'pure decoration' including art installations made from antique, reclaimed or salvage materials.

**reuse economy** - the pinnacle of resource efficiency for the reduction of carbon emissions of a hierarchy of three current (as of 2021) alternatives - reuse economy (best), circular economy (wasteful), linear economy (worst).

**RPD, reclaimed product declaration** - analogous to a new product EPD (environmental product declaration) which Salvo believes cannot by definition and regulation be obtained for a reclaimed material or product. EPDs put durable and reusable reclaimed material and products at a disadvantage compared to new, and sometimes use the insurance sector to justify the transfer of risk from the construction sector to the client which can result in reclaimed material or products being excluded from standard construction indemnity insurance.

A reclaimed product declaration is:

- unlikely to contain the original manufacturer's carbon statements
- may have allocation unknowns with embodied carbon data
- could be subject to confusion over changes in the standards of supply which leave older (but serviceable) products seemingly unable to meet new standards
- have a lack of knowledge of constituents some of which may be considered harmful to health.

The recorded perceived advantages of reusing reclaimed products dates back to Roman times. In the 1970s the author reused reclaimed building material under clauses known as 'fitness for purpose' within the Building Regulations, using simple load/deflection tests if products were to be used structurally, and timber stress grading. The RPD is intended to initiate a new common standard for construction professionals and their clients to assess the carbon benefit of reuse. Salvo is planning to launch a website at [futureuse.co.uk](http://futureuse.co.uk) for a library of technical reclamation papers and a discussion forum.

**risk** - the author has contended for the past 30 years that the small consequential risk of reusing reclaimed material and products is small compared to the enormous certainty of world climate change due in part to not reusing reclaimed material and products

**samesite salvage** - the removal and reuse of material, products or elements on the same site, either for the original purpose or recrafted/repurposed for a new purpose. If this involves cleaning, processing, storage and packaging, then the services of a stockholding reclamation dealers should be considered.

**sequestration** - perpetual storage of carbon from atmospheric fossil fuel emissions in the biosphere and geosphere; natural or engineered removal of carbon dioxide and other greenhouse gases from the atmosphere; around 20% of natural sequestration is on land in creating new wood in trees and in soil fungus and peat bog, the other 80% removed in oceans, firstly in solution and then in long term deposition to form new limestone rock on ocean floors; sequestration helps to balance and mitigate global warming, but its natural capacity may gradually be overwhelmed by the continuing emissions of carbon dioxide from burning fossil fuel; when durable reclaimed material are installed in a permanent building or landscape as a substitute for new material their acquired carbon is stored until eventual removal; if the material are made of timber such as reclaimed wooden flooring then the biogenic carbon, around 50% by

mass, and the acquired carbon are sequestered. A tonne of wood flooring usually has more embodied kgsCO<sub>2</sub>e than a tonne of reclaimed roof slates. The word 'sequestration' in this context is sometimes changed to 'carbon sequestration' because the single word 'sequestration' has other meanings.

**site2 site salvage** - the removal and reuse of material, products or elements from a site and its delivery and reuse on a different site either for the original purpose or recrafted/repurposed for a new purpose. This type of reclamation is usually in-house by a developer who reuses their own reclaimed material from one site on another site in their operating area without the ownership changing hands. There are occasions when site2site salvage is moved from a site owned by one party to a site owned by another party, with a transfer of ownership but at no cost. However, when site2site involves a transfer of ownership with payment being made and interim stockholding, then this should be treated as a reclamation dealer transaction, with both parties acting as dealers.

**system** - the collection of processes within the LCA boundaries in an LCA study. *See LCA boundaries*

**toxicity** - the degree to which a substance, matter or mixture (aka cocktail) can damage an organism; **toxicity** can refer to the effect on an animal, bacteria, plant, a cell, or an organ such as the liver; **toxicity** may be used to describe toxic effects on groups of people, such as a household, or a town, and is sometimes synonymous with poisoning; **toxicity** is dose-dependent meaning that it is the size of a dose which makes something toxic, for example even pure water can be toxic and kill a human (apparently 6 litres in one sitting), whereas for very toxic substances such as snake venom there is a dose so small that there is no detectable toxic effect; **acute toxicity**, has an immediate effect, for example when someone eats a poisonous mushroom; **chronic toxicity** could occur 30 years after a short period of inhaling asbestos at work; **toxicity** of lead by inhaling airborne dust from old lead-painted woodwork affects infants more than adults, partly because they have a higher dose because lead dust is heavy and concentrates at 'toddler height' low levels, partly because their body mass is lower than adults, and partly because they crawl around and stick their fingers in their mouths, perhaps because to some toddlers lead dust tastes sweet; elevated levels of lead in the blood return to normal after a few months, apparently; human susceptibility to toxicity varies genetically, for example, some humans who are genetically resistant to antibiotics are also resistant to heavy metal poisoning (and presumably vice versa). Members of the Salvo Code agree not to apply toxic chemicals to reclaimed material, although the term 'toxic' has never been defined. Some UK heritage property owners received a special dispensation from the EU in 1992 to restart the use of lead-based paints (*see <https://historicengland.org.uk/advice/technical-advice/buildings/building-materials-for-historic-buildings/sourcing-lead-paint/>*) which had previously been banned in the UK since 1948.

## Annex 1 - The Salvo Code

### The SALVO CODE

The Salvo Code Dealer undertakes:

- (i) Not to buy any item if there is the slightest suspicion that it may be stolen.
- (ii) Not to buy knowingly any item removed from listed or protected historical buildings or from sites of scheduled monuments without the appropriate legal consent.
- (iii) To record the registration numbers of vehicles belonging to persons unknown to it who offer items for sale, and to ask for proof of identity.
- (iv) Where possible to keep a record of the provenance of an item, including the date of manufacture, from where it came, and any previous owners.
- (v) To the best of its ability and knowledge, to sell materials free from toxic chemicals, excepting those natural to the material, traditional to its historical use, or resulting from atmospheric pollution.
- (vi) To apply Truly Reclaimed labels according to the program rules
- (vii) Not to copy knowingly unique items made or commissioned by other Salvo Code dealers.
- (viii) Where possible, and only within its ability and knowledge, to give customers the choice of buying fairly traded products.
- (ix) To allow its business details to be held on a list of businesses who subscribe to the Salvo Code and to display a copy of the code and this Certificate in a public position within their business premises.

Signed by the Salvo Code Administrator

In operation from 1995 to 2021

## Annex 2 - Logos



TRULY  
Reclaimed

TRULY  
Reclaimed

TRULY  
reclaimed

TRULY  
reclaimed

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TRULY  
reclaimed



The current preferred launch choice. This could come in other colours - possibly representing different material groups? French and other language options will also be used.

## Annex 3 - Lendager: Drivers and ... introduction

# Introduction

Over the next 40 years, the total building mass will double worldwide. The UN estimates that 230 billion square meters of building stock will be added by 2060. This is to meet the worldwide demands of the growing population, increasing middle-class and urbanization. At the same time, we know that the construction industry is reliant on finite resources, which are becoming increasingly scarce because the rate at which we consume, far exceeds nature's ability to regenerate resources. We also know that 11% of the world's total CO2 emissions come from the production and transportation of building materials.<sup>1</sup>

What seems clear is the need for development of methods and systems in which we, simply put, can get a lot more out of a lot less. Luckily, CE in the built environment is gaining momentum - with good reason. If done right, we might actually overcome the challenge of not just ensuring housing and infrastructure for a growing population, but also ensuring a balanced climate and healthy environment for people to both prosper and thrive

### Moving from niche to mainstream

If you had asked anyone ten years ago to build an entire commercial housing project from waste materials, most people would have thought you were delusional and told you to wake up from whatever dream-state you were in.

Today – a decade later – we have tested and demonstrated that through innovation and good craftsmanship, yesterday's waste can become new resources, on-par with conventional building products, without compromising on price, quality nor aesthetics. We have also proven that upcycling building materials in new projects significantly reduces carbon footprints

– preserving embodied carbon and minimizing resource scarcity. Although it is technically feasible to achieve high quality and cost-efficient results - the demand for circular building materials is still low. With this challenge in mind we ask: How do we help circular building materials move from niche to mainstream?

Given the building industry's immense impact on the environment, it will play a crucial role in the success of the new European Green Deal (EGD), which strives for the decoupling of economic growth from resource use and total climate-neutrality through net-zero emissions by 2050.

To find out where circular building materials have the most potential to move from niche to mainstream we spoke to four clients and leading building developers in the Nordic Region about their experience with CE in the building sector, and how they believe we can push for change.

<sup>1</sup>The World Green Building Council (2019) Bringing embodied carbon upfront.

## Annex 4 - Trade stakeholder workshop 2020

NWE739: Facilitating the Circulation of Reclaimed Building Elements in Northwestern Europe



### Interreg FCRBE - Attendance Sheet

#### WPT1 A3 'Truly Reclaimed' stakeholder workshop

Date: Sunday 23<sup>rd</sup> February 2020

Location: White Hart Inn, Hingham, Norfolk

Organisation	Name	Signature
Salvo	Thornton Kay	T. Kay
Salvo	Shirley Kay	S. Kay
Salvo	Sara Morel	S. Morel
Salvo	Becky Moles	B. Moles
Salvo	Faye Thorley	F. Thorley

### Interreg FCRBE - AGENDA

#### WPT1 A3 'Truly Reclaimed' stakeholder workshop

Date: Saturday 22 and Sunday 23 February 2020

Location: White Hart Inn, Hingham, Norfolk

Sat 22 Feb 18:00 - 18:30	Short presentation by T Kay of Truly Reclaimed concept
18:30 - 21:30	Group break-out discussions and individual interviews by Salvo staff of approx 25 dealer stakeholders
Sun 23 Feb 10:00 - 12:00	Further discussions by Salvo staff and entire group. Demonstration of debatergraph ideas and issues map.
12:00	End of proceeding

#### List of Working documents

- A5 questionnaires for stakeholders
- A4 4 page FCRBE colour leaflets for staff

If you buy from the other dealer  
it's hard to prove chain custody.

Negative <sup>BS</sup>  
Stamping for trade standards not going  
to adhere because we can't go  
through the testing

① Staff -

② Abroad into the standards, can't prove  
this - 50 years ago.

If they are unique pieces you can't create  
a data sheet - one off.

These 3 words  
Postcode.

# TRULY reclaimed

Truly Reclaimed will be a label  
promoting genuine antique and  
reclaimed materials. It is one of the  
deliverables of the futuREuse project

A Trade Discourse at the Salvo Convivial on 22nd & 23rd February 2020  
The White Hart Hotel, 3 Market Place, Hingham, Norfolk

Do you agree with the futuREuse aim of increasing reuse of antique,  
reclaimed and salvaged materials by 50% over the next ten years?

YES

Might a 'Truly Reclaimed' label, promoted to consumers, slow the use  
of fake reclaimed and reproductions in corporate hospitality interiors?

POSSIBLY.

Should the label be fun or serious? Like Pokemon? Or information  
about environmental benefits and the item's history? Or both?

SERIOUS

What would it be made from - virtual augmented reality, QR tag, a  
physical mark, an attached label? Made from which material?

ATTACHED LABEL

How would it be administered? By Salvo, self-administered, trade or  
consumer association, government, dealer blockchain?

TRADE ASSOCIATION !!! PROBABLY  
NOT

Please add more comments overleaf...

Name [Redacted] RS  
Signed [Redacted] Date 23 Feb 20

futuREuse



Interreg  
North-West Europe  
FCRBE

THANK YOU FOR PARTICIPATING IN THIS TRADE WORKSHOP!

Stakeholders from: London, Eastern England, West Midlands, South East England, Southern England

Question 1: Do you agree with the aim to increase reuse of antique, reclaimed and salvaged materials by 50% over the next ten years?

YES 100%

Question 2: Could a 'Truly Reclaimed' label help slow sales of fake reclaimed to the corporate hospitality sector?

YES: 60%

NO: 40%

Question 3: Should a label be more fun and interesting augmented reality like Pokemon, or more serious, environmental and historical? Or both?

SERIOUS: 67%

FUN: 8%

BOTH: 25%

Question 4: What would it be made from - virtual augmented reality, QR tag, a physical mark, an attached label - made from which material?

PHYSICAL: 75% (1 paper, 1 plastic)

AUGMENTED REALITY: 0%

Question 5: How would it be administered - by Salvo, self-administered, trade facing association, consumer organisation, construction association, government, blockchain?

SALVO: 50%

SELF-ADMINISTERED: 25%

GOVERNMENT: 33%

CONSUMER ASSOCIATION: 25%

TRADE ASSOCIATION: 17%

(multiple choice allowed)

Other comments:

- Dealer is certified to label correctly overseen by Salvo
- Physical mark or label and something for consumers eg a discreet notice or poster
- Label material is a big question, needs to be believable
- Doubt that a truly reclaimed label would stop fake reclaimed
- Avoid the faking of a label; admin by official body or self but honesty may be a question
- Admin must be enforced
- Physical mark or label
- Old style brand for wood, marketing by Salvo



- Dealer supply chain makes provenance difficult, stamping does not work on cast iron, testing rads is an issue for a physical label, staff might be an issue, buying abroad could be a provenance issue, unique historic radiators cannot have a data sheet, label will not encourage sales, good logo important
- Probably not a trade assn
- If you buy from another dealer it's hard to prove chain of custody
- Stamping for standards is not going to adhere because we cannot go through testing
- If they are unique pieces you can't create a data sheet
- An item's history is interesting to consumers
- A takeback scheme is interesting, but condition is a caveat
- Reclamation and reuse is very important to us
- There is a real shortage of aged industrial wood, floorboards, cladding. High percentage of salvage is not from Britain
- Assurance is v important to our customers, there is not enough old wood, we age slightly used new wood using cider vinegar steel wool and paint
- Most people scrap wood shuttering ply
- Reclaimed wood important to craftspeople
- We don't use the word 'reclaimed' but we do use 'reuse' and we use word 'recycling' "because of the supply chain"
- Conserves rare first growth forest timbers
- UK now sourcing more wood from abroad due to biomass burning in power stations
- Why a wood mark?
  - tells the story of the wood
  - guarantees it's reclaimed
  - raises awareness
  - increases demand for TR
  - adds rigour to upstream supply chain
  - good for biz collaboration and coaching
  - downstream CoC evidence
- Good for client engagement - discuss where different materials originate
- Some species better for certain purposes
- One of my best floor lifters is 65 years old
- No special tools needed - mattock and hard work
- I prefer native timber. Barnwood from eastern Europe is full of strange bugs
- Wouldn't mind if all wood was covered by TR label, provided it was policed
- 12ins pine boards weathered both sides must be from eastern Europe
- Responsibility lies with government to make laws stopping the demo boys from trashing timber, and allowing time for slow dismantling
- Director of a big demo company - 3 weeks early: bonus - 3 weeks late: penalty, the cost of which far outweighs the money from reclaiming - also more interference from H&SE these days
- Is 'Reclaimed in Britain' workable (asked by two new timber experts)