Edition 5 - November 2026

THE CONISBEE CARBON CIRCULAR

The *Conisbee Carbon Circular* is brought to you by the Sustainability Group. Here we cover Conisbee's sustainability journey as well as global stories on carbon in construction.

Stay informed, inspired, and empowered as we navigate the path to a greener future together.

Carbon Neutral Britain™

CARBON NEUTRAL BUSINESS 2025

CONTENTS

01 Conisbee's Operations Emissions
Embodied Carbon Dataset Trends

02 Case Study 01-Low Carbon Blocks

03 Eco Endeavours
Find out what we as a company have been up to in this section.

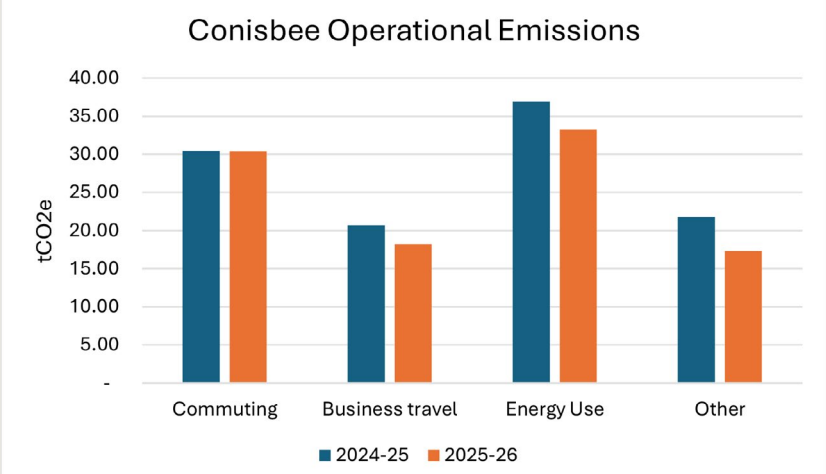
06 Spotlight Story
In this section, we explore how early supplier engagement and concrete specification can help reduce embodied carbon in construction.

07 Sustainability Scoop ... brings you notable stories about carbon in the construction industry across the world – keeping you up to date with the latest technology, most recent updates to legislation /guidance and other interesting news.

10 Case Study 02-Thoravej, 29 Copenhagen

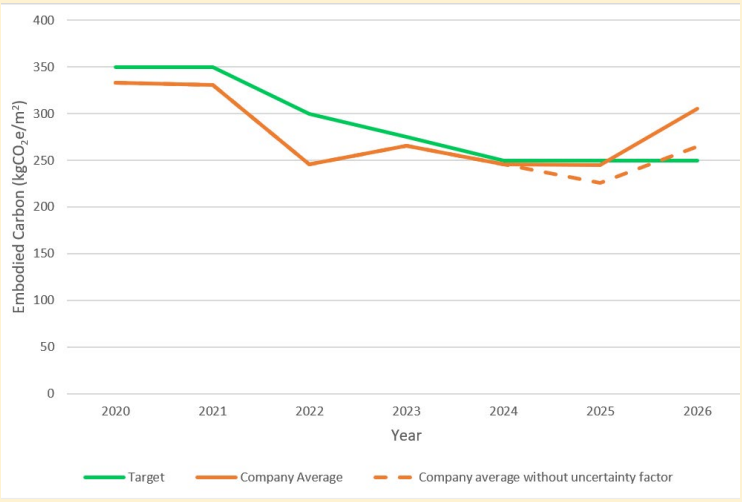
Conisbee's Operations Emissions

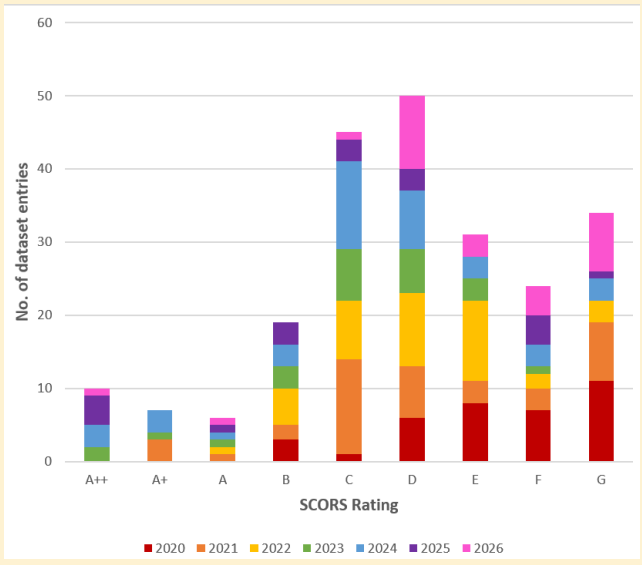
Following on from our Carbon Neutral accreditation earned last year, we have been continuing to track our operational emissions in-house in order to evaluate our success in reducing emissions in line with our Carbon Reduction Plan and identify areas for improvement. Our three largest emissions sources continue to be staff commuting, business travel, and energy usage in our offices. In the year 2025-26, our energy usage and business travel emissions have both reduced by approximately 10% compared with 2024-25 thanks to a continued commitment to encouraging low carbon transport such as public transport and cycling, and efficient use of heating over the past year.



Our 2025 away day was held closer to home in Cambridge, compared to Brussels the previous year, which also contributed to the reduced business travel carbon footprint. We are in the process of renewing our Carbon Neutral accreditation for this year.

Embodied Carbon Dataset Trends





- The third version of the IStructE calculator introduced an uncertainty factor to calculations (see previous newsletter), which was applied to entries from July 2025 onwards. For most projects, this increases the embodied carbon score by 15%.
- New build projects are often struggling to meet our embodied carbon target.
- We only had 19 dataset entries in 2025 but this has improved in 2026 with 28 entries so far this year.

Case Study 01

Low Carbon Blocks

Exploring Lower-Carbon Masonry

As part of our sustainability work on the Harvist Estate project, we have undertaken a Stage 2 comparative review of lower-carbon alternatives to traditional brick and blockwork construction. The purpose of this assessment was to understand how emerging masonry products compare with conventional solutions in terms of embodied carbon, cost and early-stage structural performance, to help inform future design decisions. At this stage, the review is indicative rather than final and has been carried out at a high level to highlight opportunities and constraints ahead of more detailed design.





A masonry comparison matrix was developed covering a range of traditional and alternative products proposed for external walls, internal leaves and party walls. The assessment considered architectural, environmental and structural parameters, including thermal conductivity, compressive strength, flexural strength, fire and acoustic performance, cost and embodied carbon. The table below summarises the products reviewed and some of the data available at Stage 2.

Masonry Comparison Table

Product	Compressive Strength (N/mm^2)	Flexural Strength (N/mm^2)	Cost (£)	Carbon ($kgCO_2e/m^2$ Wall Area)
Traditional Brick	15	Perpendicular: 0.9 Parallel: 0.3	-	39.84
Medium Density Blockwork	7.3	Perpendicular: 0.6 Parallel: 0.25	-	19.19
Strocks	2.6 - 4.6	Perpendicular: 0.3 Parallel: 0.06	£35.40	7.89
K-Briq	4.32	Perpendicular: 0.45 Parallel: 0.13	£138.00	26.14
Pirrouet Brick	20	-	-	13.13
Hempcrete Blockwork	0.2	0.3-0.4	£47.41	7.29

Key Structural Observations

Many lower carbon masonry options have lower compressive strength than the traditional units currently proposed within our loadbearing masonry frame. This does not rule out their use but highlights the need to manage load paths carefully as the design progresses. At this stage, it is anticipated that lower strength materials may be suitable for large areas of internal masonry. However, locations beneath steel beams or precast floor units are likely to require either:

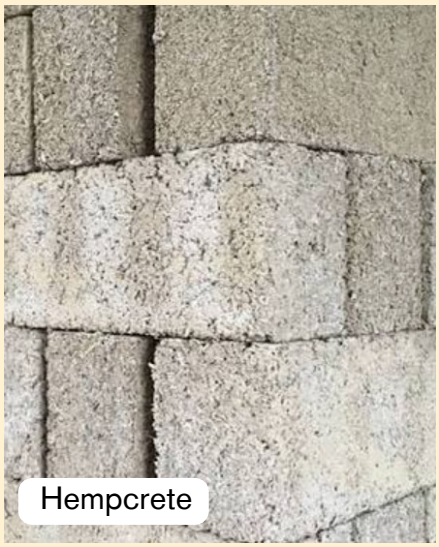
- Localised use of higher strength masonry units.
- Enhanced padstones to spread loads more effectively.

Flexural capacity was also reviewed at Stage 2, as the current design assumes both masonry leaves contribute to resisting lateral loads via cavity tying. Several of the lower carbon options show reduced flexural strength compared with traditional masonry, which may affect how lateral actions are resisted. Potential approaches to be explored at later stages include:

- Retaining a traditional masonry leaf alongside a lower carbon alternative.
- Introducing additional lateral restraint to reduce reliance on masonry flexural capacity.


Strocks


K - Briq


Hempcrete

Conclusion

At this early stage, the assessment indicates that embodied carbon reductions in masonry construction are achievable but they need to be carefully considered from a structural perspective.

Retaining one traditional cavity leaf while optimising the other for lower carbon materials is currently considered a realistic route, pending further analysis in the next stages.

Eco Endeavours

Talking Reuse

The Engineers Reuse Collective (tERC) host regular events to discuss reuse of different materials, case studies and how to promote reuse. Conisbee's Dave Richards presented at an event in September "Talking Reuse: Rehabilitating Buildings", presenting on the proposed refurbishment and extension of International House, Brixton. The talk outlined the detective work required to establish the existing structure, the challenges of waffle slabs, and the scope of intrusive investigations. The use of reclaimed steel was considered for the project but unfortunately it was deemed too risky for this higher risk building, where sections can't be switched to suit availability after gateway 2 approval. The available sections were also generally tubular, which didn't suit the design requirements. As with most tERC events, the recording and slides are available to members on the tERC website.

THE ENGINEERS REUSE COLLECTIVE



CPD to Bond Bryan Architects

Steve presented a CPD to Bond Bryan architects outlining how we measure embodied carbon here at Conisbee and how architects & structural engineers can work together to reduce it. There was a lively discussion afterwards with some great conversations on the impact of architectural decisions on structural efficiency and hence embodied carbon. We're always happy to share our knowledge on sustainability and look forward to more of these conversations in the future.

Advocating for Reused Steel

Conisbee has been working on the refurbishment and extension of a Grade II listed building located along the River Thames. The existing structure comprises a reinforced concrete frame originally constructed in the late 1930s, which has since undergone a number of alterations and incremental extensions.

To accommodate increased occupancy and new uses, the current proposals include further extensions formed primarily from steelwork. As part of the Conisbee's sustainability initiatives, Conisbee have proposed the use of reclaimed structural steel to the client and wider design team.

This approach supports circular economy principles by prioritising reuse and recycling, significantly reducing the embodied carbon associated with new construction. The scheme seeks to carefully balance heritage sensitivities with contemporary structural interventions, demonstrating how historic buildings can be adapted to meet modern requirements while minimising environmental impact.

Concrete Mixes in Spec

Conisbee's NBS Chorus master specification section E10 has been revised to include embodied carbon targets for concrete mixes. We are anticipating receiving pushback on this on some projects due to supply availability, cost and possible effects on curing time. However, it is hoped that the targets will encourage mix suppliers to report the embodied carbon of their mixes, show there is demand for lower carbon concretes, and highlight to our clients the potential sustainability savings that can be made.

By stating an overall target to achieve rather than a specific cement replacement product to be used, we hope to give suppliers flexibility in the combinations they can propose to achieve the target. The target may not always be achievable, but we should push for it where we can. More information on concrete mixes can be found in our spotlight story on page 6.

Custom EPD Guidance

The Conisbee custom EPDs were introduced to our carbon calculator last year, with information delivered through a CPD and the last newsletter. These aim to make carbon calculations quicker for timber joist, posi-joist, composite slab and beam & block flooring. A how to guide for using these custom EPDs is now available on the Sustainability Landing page. Our extracting volumes from Revit guide has also been updated recently.



Engineers in the Woods

From 9-12 July 2026, 25 engineers from 18 Engineering Club member companies came together at Hazel Hill Wood in Wiltshire for the inaugural Engineers in the Woods residential design-and-build weekend. Set within the Hazel Hill Trust's 70-acre conservation woodland, the four-day event brought together engineers from across the industry to collaborate, learn new skills, and leave a lasting legacy for the woodland and its visitors.





Conisbee's Rebecca Presswood was part of 'Team Pond', who successfully built two pond-dipping platforms, a small footbridge and three small tables/stools. These will be used by small groups of adults and children to explore the biodiversity of the pond on visits to Hazel Hill.

All the timber was felled in the wood and cut to size on site. Calculations were very limited for the structure, it was designed 'by inspection' using prototyping and engineering judgment. The team were able to fit ten adults on the larger platform, but have limited it to two adults in the future to be on the safe side!

Sustainability Channel

A sustainability channel has been added within the company's Technical Forum on Teams. This is a quick and easy way to ask questions about sustainability topics and share knowledge from talks & project experience.

Spotlight Story:

Engaging with the concrete supplier early

On a concrete frame project, the concrete specification is a significant factor in the embodied carbon of the project. Engaging early on with concrete suppliers and contractors is the best way to try and meet sustainability aims. On the University of Herts Health School we did exactly this, meeting with Toureen (frame contractor) and Holciem (concrete supplier) during RIBA stage 3 in late 2025. The conversation gave us some great insights into current concrete supply, with the following general guidance points given:



Concrete can be specified on 56-day strength rather than 28-day strength.

The supply picture is changing quite rapidly at the moment, so it's important to have regular conversations with suppliers. Early engagement allows more options to be planned for.

Discuss the finish requirements with the architect. Fair-faced concrete normally requires more cement but the increased carbon may be balanced out by removed finishes and their associated carbon.

Carefully review tender returns for what mix specification they are based on. Different tendering contractors will give different levels of detail to the concrete supplier, resulting in different mixes being returned, some of which likely won't meet carbon targets and may appear cheaper as a result.

An open specification gives more flexibility, allowing the supplier to provide something available in the local market. E.g. state an embodied carbon target to meet rather than a GGBS percentage, or state a required cement replacement percentage on the job as a whole, rather than a percentage for each different mix.

Lots of contractors like known CEM I mixes with quick curing times but CEM I is not necessarily the cheapest. Some limestone replacement mixes (e.g. CIIA-LL) can be cheaper and save embodied carbon.

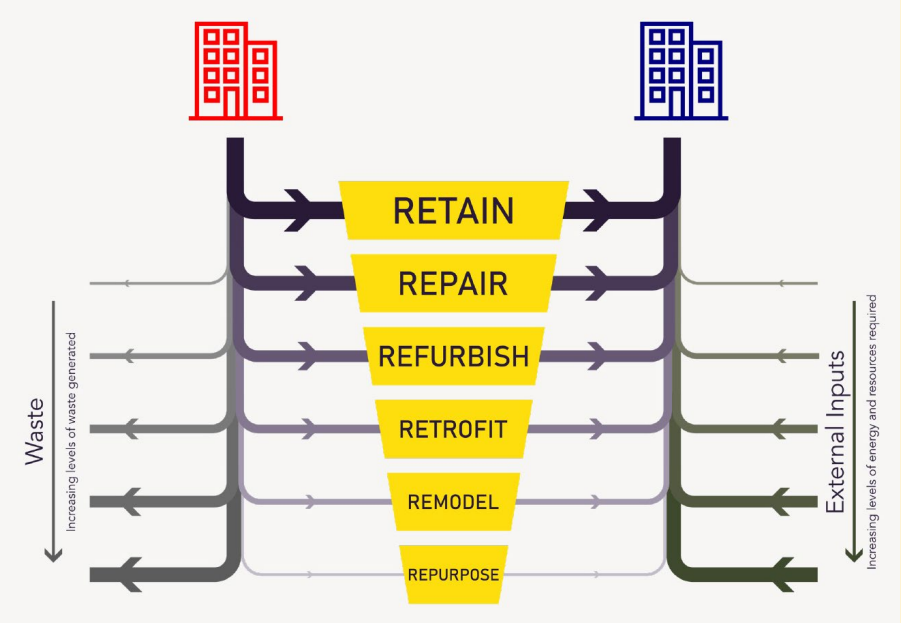
We also learnt that supply varies significantly across the UK, with some concrete plants lacking sufficient silo capacity for multiple materials (e.g. cement, GGBS, limestone), particularly outside major cities. As a result, cement replacement is more feasible on London sites, which also benefit from access to multiple plants. While limestone fines are readily available in the UK, limited silo capacity remains a constraint. Changing silo use requires a large project, clear programme, and alignment with plant logistics. Calcined clay supply has been challenaging in the UK, but a new facility is expected to be operational by 2027.

Since the initial discussion, the project has unfortunately progressed using a CEM I mix due to insufficient local supply of cement replacement materials. However, for the foundations, 56-day strength has been specified instead of the standard 28-day strength, reducing overall cement demand.

Sustainability Scoop

The Reuse Hierarchy

The Engineers Reuse Collective have published 'The Reuse Hierarchy', which provides a clear framework for reuse decisions, similar to the IStructE Net Zero Hierarchy. Engineers can use the hierarchy to maximise value from existing assets while minimising environmental impacts. Detailed information and case study examples are available to members on the tERC website and in The Structural Engineer edition taken over by tERC. At Conisbee, we've also added this new resource to our Sustainability Landing Page.



Structural Engineers Declare Summit

As ever, there were plenty of interesting talks at this year's annual summit. Conisbee's Allan Dunsmore was in attendance and reported that of the sessions he attended "The one which struck me most was the social and climate justice talk. It highlighted how much the production of construction materials involves child labour and how the industry is blind to it. More regulation is required here to enable companies to purchase from ethical sources. The report will be worth reading. The industry needs to look beyond just embodied carbon and into the social impact of our material choices and sourcing, the child labour aspect was pretty shocking." The summit also acknowledged that there can be significant variation in dataset values for embodied carbon, so the numbers should be treated as a trend to enable us to reduce our impact, rather than being 100% exact. Measuring embodied carbon has made the industry much more aware of the importance of considering re-use, rather than going straight to demo and new build, but overall, the impact of construction is extremely harmful to the planet, no matter how much we greenwash. All the summit's presentations are expected to be made available to watch on the IStructE website towards the end of November.

The Institution of Structural Engineers



Recovering Steel for Reuse

With increasing numbers of projects incorporating steel reuse, it's important to understand how we can source this steel. A recent IStructE article gives a demolition contractor's view on the topic. One of the key requirements raised by demolition contractors was the need to know which steel sections are worth recovering for re-use and which are not. Early and close engagement with the client and design team are key. The insights from demolition contractors are translated into a practical toolkit for recovering steel for reuse, including a decision tree that helps identify which steel sections are worth salvaging and flow charts showing the required steps. Several key actions structural engineers can take to improve steel recovery rates are:

- Engaging early with demolition teams
- Setting realistic targets
- Avoiding late design changes
- Considering reuse in small-scale projects
- Promoting designing buildings for disassembly

Islington Sustainability Network

Conisbee continue to sit on the Steering Committee of the Islington Sustainability Network, which aims to bring together the knowledge and skills of a wide range of local public, private, and third sector organisations for the betterment of sustainability aspirations across the borough. The Islington Businesses Climate Resilience Toolkit helps business assess the risk of climate change and take practical steps towards building resilience. Alongside ISN's regular programme of retrofit site visits, conference events, and news bulletins, this summer saw the return of the Islington Sustainability Fair following the success of last year's inaugural event. The network has also been broadening their engagement with local schools this year.

Carbon Scheme Tool

Branch have launched a free to use carbon scheme design tool. This allows the user to quickly change variables such as material & typical span and see the resulting embodied carbon score. The tool gives high level results only and does not include foundations.

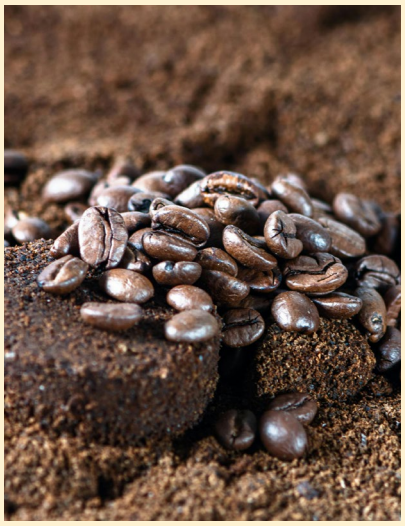
Circular Construction Hub

A new Circular Construction Hub has been established at London's Royal Docks to recycle and reuse construction materials that would otherwise end up in landfill. This is the first phase in the creation of a Circular Economy Village in Silvertown.

The materials from the hub will be used in the construction of new housing developments in the local area. The facility aims to become the largest circular construction hub in Europe and to divert at least 950 tons of waste from landfill over five years.

Net Zero Concrete using Coffee Grounds

As part of on-going research into the next generation of low carbon concretes, some experimental full-scale concrete pours have been carried out in Canary Wharf. These used a biochar concrete mix, with the biochar sourced from UK coppiced wood and spent coffee grounds collected from Canary Wharf coffee shops. The biochar acts as a carbon sink by locking the CO_2 absorbed by the trees and coffee plants during their growth inside the concrete. The building is transformed from a carbon source to a carbon sink. In the first test, an impressive 80% reduction in A1-A3 embodied carbon emissions was achieved compared to traditional CEM 1 concrete. In the second set of trials, a net zero concrete was achieved with the biogenic carbon storage offsetting the fossil emissions. More information can be found in the full press release.



UK Timber Design Conference

The TDUK 2026 conference brought together engineers, architects and developers to share best practice and emerging ideas for low-carbon timber design. Sessions covered design efficiency metrics for timber structures, robotic manufacturing and a range of case studies. Conisbee's Rebecca Presswood was in attendance and reported, "Two themes stood out as particularly relevant to low-carbon design:

UK C16 timber - Specifying C24 timber effectively rules out UK-grown timber, since nearly all of it is graded C16. C16 is adequate for many projects, so specifying it where structurally appropriate opens the door to domestic supply and cuts transport emissions significantly. For example, C24 timber might travel around 800 miles, while C16 could travel as little as 45 miles.

Reuse of timber - One of the conference sessions showcased the potential of reclaimed timber in new structures, which I thought was fascinating given that the industry is only just getting its head around re-use of steel! Two case studies included: Finsbury Circus Gardens and Marlborough Sports Garden. A key challenge raised was quantifying the residual durability of reclaimed timber, which complicates specification and confidence in its long-term performance. It was amazing to see what is possible when the design team has early collaboration and engagement with suppliers and developers."

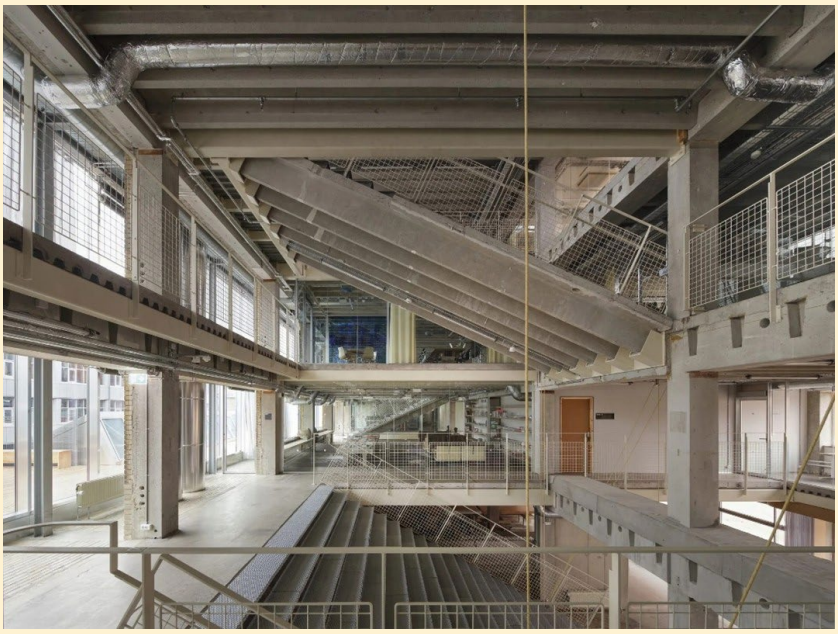
Did you see tERC's takeover of The Structural Engineer? It's a bumper sustainability issue covering the reuse hierarchy, case studies, opinion pieces and more.

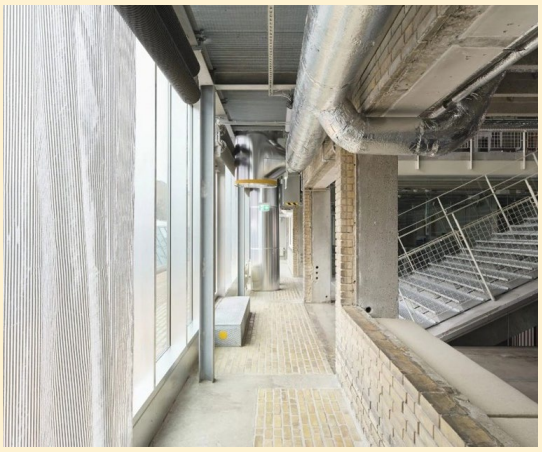
Intelligent Carbon Assessment & Reduction

Conisbee attended the Constructing Excellence Essex Club breakfast CPD event in February. CEEC hosted Morgan Sindall who talked about their "Carbonica" project - a new intelligent carbon assessment and reduction tool which is making great strides to simplify the carbon assessments on all of their projects, and is building a database for sub-contractors and consultants to use to assess their carbon use when they sign up to their supply chain. They have a goal to making all their projects carbon neutral by 2040. Morgan Sindall advised that they are aiming to release the programme for general access / use later this year. A thought-provoking talk and will be interesting to follow the development of the database and app to see how it could be utilised by the wider construction industry.

Case Study 02
Thoravej, Copenhagen

This exciting reuse project by a Danish design team involved extensive reuse of existing building elements to create a new arts and community hub. The project recorded 95% re-use or recycling by weight, delivering up to 88% embodied carbon reduction and 90% less construction waste, compared with an equivalent new build.







One of the client's requests was the creation of double and triple height spaces. The existing precast planks removed from these areas were used to create new staircases in the building. Careful consideration in the design, calculations and work on site was required to execute this smoothly, particularly since the planks were prestressed. The team were able to contact the original suppliers, who still had the original drawings. Testing on site was then able to confirm if the positioning of the reinforcement tendons matched the drawings. Before cutting the planks, pretension-preserving brackets were fixed to lock the tendons and maintain capacity during handling.

Extensive structural calculations were required to justify the adaption into staircases, particularly since the reuse required the planks to be inclined at 25°, rather than their original horizontal orientation. The mountings used engineered brackets and plates with threaded rods and chemical anchors, providing shear and fixity to adjoining structure without compromising existing reinforcement.

As well as staircases, repurposed concrete elements were also used to create new furniture. Wooden waste from the building, such as old doors, also found a new life. A supplier took the wooden waste and shredded it to create new particle boards, which were then used to make shelves and tables. A new yellow brick paving was created using bricks that used to be part of the façade. More information and photos from the project can be found in this article and this article.

Sustainability Group Information

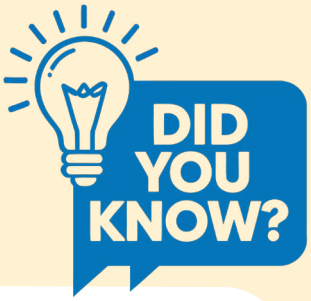
The Conisbee Sustainability Group is:

Allan Dunsmore
Beena Doal
Helen Hawker
Holly Morgan
Jake Dooner
Jay Shann
Joel Waugh
Joseph Baxter
Melissa Nash
Sam Paterson
Sandra Dejczoova
Steve Marks
Tanya Blackwood

THE CONISBEE CARBON CIRCULAR

Thank you to the following contributors:

Allan Dunsmore
Adrian Wong
Charlie Burke
Dave Richards
Holly Morgan
Jay Shann
Melissa Nash
Rebecca Presswood
Sam Paterson
Simon Prior
Steve Marks



The potential for steel reuse can be maximised by providing flexibility in section sizes where dimensions aren't critical. Substitution with a heavier or deeper reused section can still result in a carbon saving compared to new steel if the increase in section weight is less than 20%.

This edition was edited by: Melissa Nash & Conisbee Marketing Team

If you would like to contribute to the newsletter, whether you have a case study of interest, a project that's done well or really badly, have attended an interesting lecture, or have presented one yourself - then get in touch with someone on the sustainability group.



Spread the word!

Please help spread the word on all things sustainability by sharing this newsletter with other industry professionals.