SENIOR ARCHITECTURAL SYSTEMS

Closing the Loop

Circular recovery of architectural aluminium systems



Closed Loop Recycling & Circularity Guide

Part of ASSA ABLOY

About this document

Circularity is not an add-on. It is a design, procurement and operational decision that protects resources and reduces carbon emissions.

This document sets out Senior Architectural Systems' closed loop recycling offer and provides a practical guide to delivering traceable recovery of end-of-life aluminium systems on refurbishment, replacement and demolition projects.

It is designed to be issued alongside Operation & Maintenance manuals (O&M) and Environmental Product Declarations (EPDs), allowing project teams to plan end-of-life outcomes early, protect architectural-grade aluminium and keep valuable material in circulation.

Where this guide fits

This guide helps you:

- Plan recovery and segregation of aluminium systems during refurbishment or demolition.
- Use the CAB Closed Loop Recycling Scheme pathway to support material recovery, logistics and traceability.
- Collect evidence that can support project sustainability requirements (including BREEAM).
- Support Scope 3 decarbonisation through higher recycled content and reduced primary aluminium demand.



Image and data use

All product renders included in this brochure are Senior Architectural Systems assets supplied for use in project documentation. One graphic is reproduced from a Senior Architectural Systems marketing asset. All charts, icons and infographics were created specifically for this brochure.

References include: Senior Architectural Systems EPDs (EPD Hub) and CAB Closed Loop Recycling Scheme information.

At the forefront of innovation



For 35 years, Senior Architectural Systems has been at the forefront of the aluminium fenestration industry, designing and manufacturing aluminium windows, doors and curtain wall systems that are built to last.

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SAS SENIOR ARCHITECTURAL SYSTEMS

Executive summary: a model way of working

Senior Architectural Systems (SAS) is one of the UK's leading manufacturers of aluminium fenestration solutions. We design, manufacture and supply innovative aluminium profiles for high-performance windows, doors and curtain walling. This includes our patented PURe® range, featuring an advanced polyurethane (PUR) thermal break that delivers ultra-low U-values and outstanding thermal efficiency.

With a state-of-the-art manufacturing facility in South Yorkshire, including in-house powder coating, thermal improvement facilities and distribution centres in Scotland and Rotherham, we help customers deliver façades that perform as well as they look.

- **Impressive performance:** High-performing systems engineered for thermal efficiency, durability and future dismantling and recycling.
- **UK designed and manufactured:** Designed for UK projects, with manufacturing and quality control based at our South Yorkshire facility.
- **Large network of support:** A responsive UK-wide network of fabricators, installers and technical support, aligned with CAB partner routes.
- **Sustainable manufacturing:** Continuous improvement in waste prevention, packaging reduction and operational efficiency.

> "A strong national supply chain, built on long-standing relationships across the industry, enables us to deliver our aluminium fenestration systems efficiently and reliably throughout the UK. With a heritage shaped by decades of collaboration and strengthened further through our links with ASSA ABLOY, we remain focused, as we always have, on how we can better support our customers. This means giving them confidence in consistent quality, dependable lead times and a service they can trust on every project."
>
> **Mark Wadsworth, Managing Director**

As part of our waste and carbon reduction strategy, SAS supports a closed-loop recycling pathway through the Council for Aluminium in Building (CAB) Closed Loop Recycling Scheme. This provides project teams with a structured, auditable route to reclaim end-of-life aluminium systems and return them to high-value recycling - supporting circularity, reducing raw material demand and improving the credibility of reporting.

Our objective

Deliver practical circularity at project level:

- Keep architectural-grade aluminium in circulation for as long as possible.
- Reduce raw material demand and associated embodied carbon.
- Improve segregation and traceability on refurbishment and demolition projects.
- Support customers with evidence for sustainability reporting and certification.

This approach is intended to be transparent, open and supportive of customers. It sets out what SAS can do, what partners typically do, and what evidence should be captured to demonstrate outcomes.

Why circularity matters for the built environment

The built environment is one of the most resource-intensive sectors of the global economy. Constructing, maintaining and eventually replacing buildings requires large volumes of raw materials, energy and infrastructure. As the industry works to reduce whole-life carbon, improving how materials are used, recovered and returned to productive use has become just as important as improving operational energy performance.

Circular approaches aim to keep materials in use for as long as possible, reducing waste and limiting the need for new raw material extraction. For construction products, this means designing systems that are durable, recoverable and capable of being recycled into new building materials at the end of their service life.

Key industry context

Selected statistics (global and UK):

- Selected statistics highlight the scale of the challenge across the built environment.
- Buildings and construction are responsible for a significant share of global emissions, accounting for around 37% of energy and process-related CO_2 emissions. [R10]
- In the UK, construction, demolition and excavation activities generated around 61% of total waste in 2020, making the sector the largest contributor to the national waste stream. [R11]
- Increasing material recovery, reuse and high-quality recycling reduces demand for virgin resources, helping to lower upstream emissions and reduce wider environmental and ecosystem impacts associated with extraction and processing.

Circularity and façade systems

For façade systems, circularity presents a practical opportunity to reduce embodied carbon while maintaining material value. Aluminium used in building envelopes can remain in use across multiple life cycles if it is properly recovered, sorted and reprocessed at the end of a building's service life.

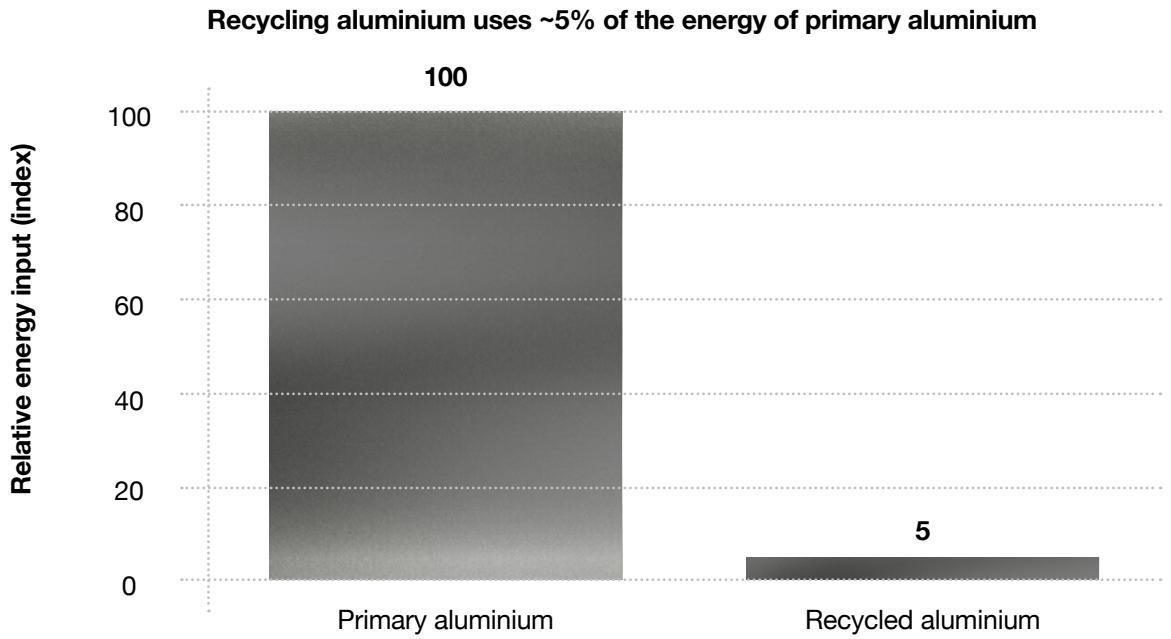
Within the UK construction sector, this makes aluminium an important material in the transition towards more circular building practices. When managed through appropriate recovery and recycling routes, aluminium from façade systems can be returned to the manufacturing cycle and used again in new building products.

Senior Architectural Systems supports this approach by promoting responsible material recovery and encouraging circular thinking across the lifecycle of its products.



Why aluminium is a circular material

Aluminium is highly suited to circular construction. Unlike many materials used in the built environment, aluminium can be recycled repeatedly while maintaining its key properties when correctly sorted by alloy.



When recovered and processed correctly, aluminium can be remelted and returned to new building products, significantly reducing the need for primary aluminium and the associated carbon impacts.

Within the construction sector, this creates an important opportunity. Aluminium systems installed in buildings today can become a valuable material resource when they reach the end of their service life. By designing durable systems and supporting responsible recovery pathways, Senior Architectural Systems helps ensure aluminium remains in productive use for longer and continues to deliver value across multiple life cycles.

What enables high-value closed-loop aluminium recycling?

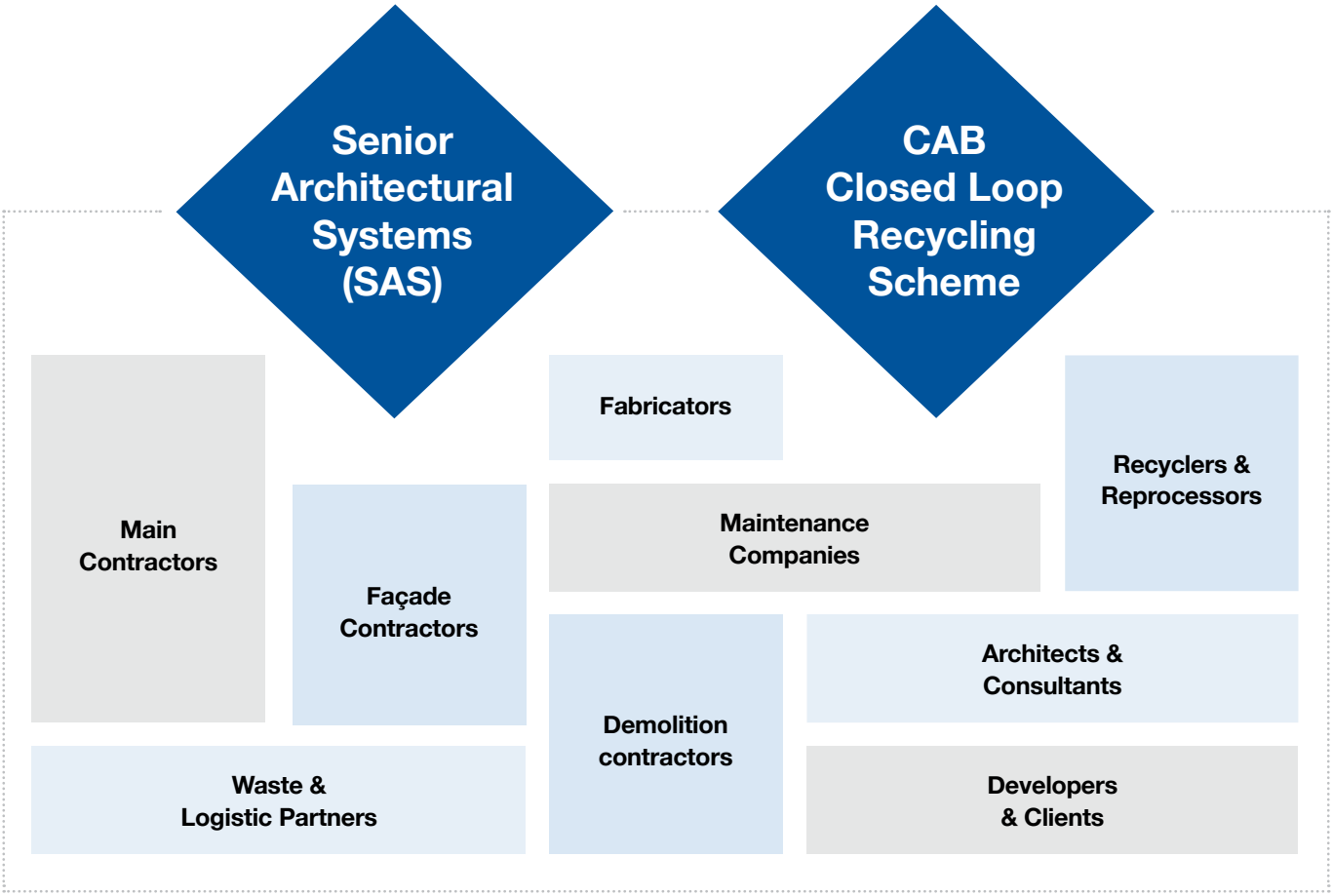
- Segregation at source to reduce contamination from steel fixings, mixed metals and other components.
- Identification of alloy families to support like-for-like remelting and minimise down-cycling.
- Traceable logistics and documentation to support transparent reporting, including BREEAM and other certification requirements.
- Clear routes back into building products, aligning end-of-life recovery with procurement and specification decisions.



Why SAS partners with the CAB Closed Loop Recycling Scheme

CAB's scheme increases closed loop recycling by encouraging collection and sorting of aluminium scrap into specific wrought alloy groups, improving quality and value. [R5]

CAB reports that 3,300 tonnes of aluminium recycling was reported by the pilot project during 2019, rising to 6,000 tonnes by 2022. [R5]



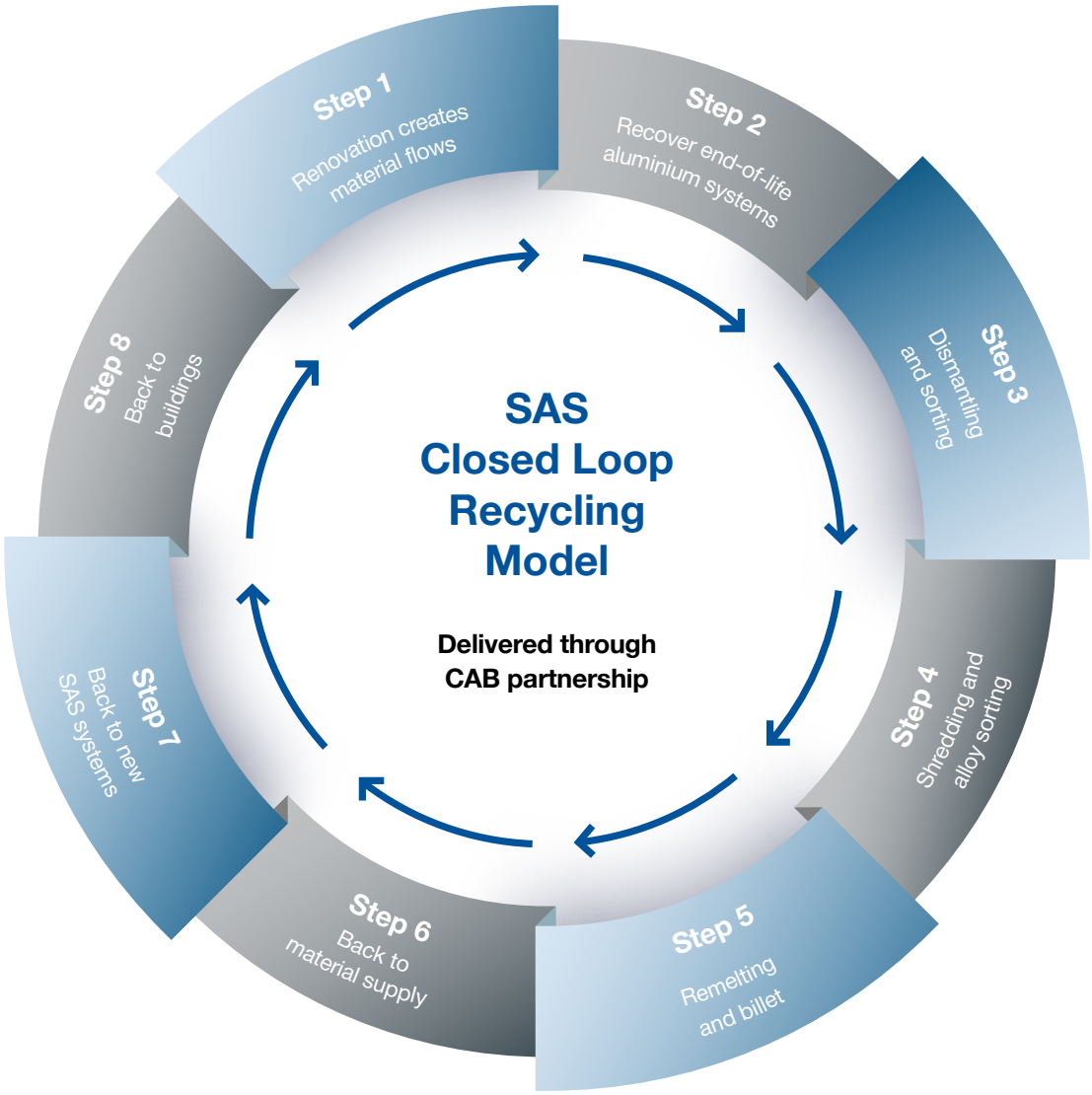
Circularity is not automatic. Outcomes depend on how products are dismantled, segregated and routed at end of life. SAS uses the CAB scheme to connect stakeholders and encourage best practice in collection, segregation and traceability.

What CAB membership adds

- A framework connecting parties across refurbishment, demolition and recycling.
- Improved traceability and confidence in closed loop claims through data collection. [R5]
- A route to protect alloy quality through better segregation and sorting.
- Support for customer evidence requirements and sustainability reporting.

The SAS Closed Loop Recycling Model (overview)

Senior Architectural Systems (SAS) is a Founder Member of the Council for Aluminium in Building (CAB) Closed Loop Recycling Scheme. Through this partnership, SAS works with contractors, fabricators, recyclers and logistics partners to support the recovery and responsible recycling of aluminium architectural systems used in construction projects.



The model provides a clear and practical framework for live projects. Responsibilities are defined across the supply chain, aluminium materials are segregated to protect alloy quality, and evidence is captured to support traceability. Recovered aluminium can then be routed to approved processors, remelted into billet and returned to the manufacturing cycle as new aluminium profiles.

Source: CAB Closed Loop Recycling Scheme information (c-a-b.org.uk).

Circular recovery pathway: from refurbishment to new systems



Stage 1: Renovation & refurbishment

Renovating buildings creates material flows — and the opportunity to reuse existing resources.

What happens

Refurbishment and retrofit programmes generate substantial volumes of construction materials. With early planning, aluminium systems can be removed and recovered in a way that protects material quality and enables closed loop recycling.

For projects targeting sustainability frameworks such as BREEAM, early waste auditing and materials planning are particularly important, for example under Wst 01 Construction Waste Management, to ensure materials are properly identified, segregated and managed. [R8]

What you can do

- Define circularity and material recovery expectations within the project brief and scope.
- Undertake a pre-refurbishment or pre-demolition audit to identify aluminium systems and estimate likely tonnages.
- Engage Senior Architectural Systems at an early stage to discuss potential recovery routes and any practical constraints, such as access, sequencing and storage.
- Allocate suitable space on site for the segregation and secure storage of recovered aluminium.
- Include aluminium recovery requirements within the demolition or strip-out scope.

Evidence and data to capture

- Audit report and materials inventory, including aluminium façade systems where present.
- Indicative tonnage estimates to support recovery planning and logistics.
- Project requirements, such as BREEAM targets or client sustainability reporting expectations.

Avoid

- Treating aluminium systems as mixed demolition waste without a segregation plan.
- Unprotected storage that may lead to contamination from rubble, sealants or mixed metals.

Circular recovery pathway: from refurbishment to new systems

2

Stage 2: Recover end-of-life aluminium systems

Partnering with project teams to reclaim aluminium systems and return materials to productive use.

What happens

During refurbishment, replacement or demolition works, aluminium façade systems such as curtain walling, windows, doors and framing components can be recovered and directed into appropriate recycling routes.

Senior Architectural Systems works with project teams and partners connected through the Council for Aluminium in Building (CAB) Closed Loop Recycling Scheme to support the responsible recovery of these materials. When systems are carefully removed and correctly segregated, the aluminium can be routed to specialist processors, remelted and returned to the manufacturing cycle.

Closed-loop recovery routes help maintain alloy quality, allowing aluminium from architectural systems to be reused in high-performance building products rather than lost through lower-grade recycling streams. [R5]

What you can do

- Contact Senior Architectural Systems with the project location, programme and a summary of the aluminium systems scheduled for removal.
- Agree the material streams in scope and establish a segregation approach that protects alloy quality.
- Integrate recovery requirements into demolition method statements, strip-out strategies and relevant subcontract scopes.
- Plan safe handling and temporary storage arrangements to prevent contamination during removal works.

Evidence and data to capture

- Project identification reference to support traceability and evidence tracking.
- Estimated weights or volumes of recovered aluminium to support logistics planning.
- A basic recovery plan covering containers, storage locations and collection frequency.

Avoid

- Selling aluminium scrap without any traceability record or recovery evidence.
- Assuming recycling will automatically occur without managing segregation and contamination on site.

Circular recovery pathway: from refurbishment to new systems



Stage 3: Dismantling & sorting

Protecting material quality through careful dismantling and segregation.

What happens

During strip-out or demolition works, aluminium systems are dismantled and separated from surrounding components. Aluminium is segregated from glazing, gaskets, steel fixings and other metals to maintain alloy quality and maximise the potential for high-value recycling.

Effective on-site sorting is an important step in the circular recovery process. By keeping aluminium clean and uncontaminated, project teams help ensure the material can be directed to appropriate processors and returned to the manufacturing cycle.

What you can do

- Separate aluminium from glazing and other components where practicable.
- Keep aluminium distinct from steel fixings, mixed metals and contaminated waste.
- Use clearly labelled stillages, bins or containers dedicated to aluminium only.

Evidence and data to capture

- Photographs demonstrating segregation and appropriate storage controls.
- Weights by material stream where available, supporting project reporting.

Avoid

- Mixed skips combining aluminium with rubble, steel and general waste.
- Excessive on-site cutting that mixes materials and reduces recovery potential.

Circular recovery pathway: from refurbishment to new systems

4

Stage 4: Collection, logistics & traceability

Ensuring recovered aluminium is collected responsibly and supported by clear, auditable evidence.

What happens

Once aluminium systems have been dismantled and segregated, the material is collected through agreed logistics routes. Senior Architectural Systems works with partners connected through the Council for Aluminium in Building (CAB) Closed Loop Recycling Scheme to ensure recovered aluminium is directed to appropriate recycling processors.

Effective logistics and clear documentation help maintain traceability throughout the recovery process. CAB collects confidential monthly data returns from participating partners to compile aggregated evidence of aluminium recycling activity within the UK construction sector. [R5]

What you can do

- Agree container types, collection frequency and permitted storage locations in advance.
- Record weights and maintain a simple chain-of-custody log linked to the project ID.
- Ensure waste carriers and recycling processors are appropriately licensed.

Evidence and data to capture

- Weighbridge tickets or collection notes confirming quantities and collection dates.
- Waste transfer documentation and a basic chain-of-custody record.

Avoid

- Unrecorded collections where no weight or transfer evidence is retained.
- Mixing different scrap grades in the same container without prior agreement.

Circular recovery pathway: from refurbishment to new systems



Stage 5: Shredding & alloy sorting

Processing that separates aluminium from other metals and protects alloy quality.

What happens

Once collected, recovered aluminium is transported to specialist recycling facilities where it is processed and prepared for remelting. Mechanical processing, including shredding and metal separation technologies, separates aluminium from other metals and residual materials.

Closed-loop recycling routes aim to keep scrap within compatible wrought alloy groups wherever possible, protecting alloy quality and enabling the aluminium to be remelted and returned to the manufacturing cycle. In many cases, this material can return to the market as recycled aluminium billet and extrusion profiles for use in future building systems. [R5]

What you can do

- Protect aluminium quality upstream, clean and well-segregated scrap significantly improves recycling outcomes.
- Share any relevant system or alloy information with Senior Architectural Systems where available.
- Support traceability so recovered aluminium can be directed through appropriate recycling routes.

Evidence and data to capture

- Processor confirmation of receipt and the intended processing route, where available.
- Feedback on contamination levels and lessons learned to support continuous improvement.

Avoid

- Mixing aluminium with copper, brass or steel contaminants that can reduce alloy quality and recycling value.

Circular recovery pathway: from refurbishment to new systems

6

Stage 6: Remelting & recycled billet

Turning recovered aluminium into secondary material for future production.

What happens

At specialist recycling facilities, recovered aluminium is remelted and processed into secondary aluminium suitable for manufacturing new products. By keeping scrap within compatible alloy groups, recyclers can produce high-quality recycled aluminium that can be used in new billet and extrusion processes.

Recycling aluminium requires significantly less energy than producing primary aluminium, typically saving around 95% of the energy required for primary production, while helping reduce associated carbon emissions. [R4]

What you can do

- Request transparent documentation where recycled content claims are made.
- Use Environmental Product Declarations (EPDs) and whole-building life cycle assessment (LCA) to evaluate improvement strategies.
- Consider how recycled content and recovery pathways contribute to wider project sustainability targets.

Evidence and data to capture

- Supporting documentation for recycling routes and recycled content claims, where applicable.
- Project LCA outputs and key assumptions used within carbon assessments.

Avoid

- Unverified recycled content or “carbon neutral” claims that are not supported by credible evidence.

Circular recovery pathway: from refurbishment to new systems



Stage 7: Back to new SAS aluminium systems

Secondary aluminium supports the next generation of high-performance architectural systems.

What happens

Recycled aluminium produced through remelting and billet manufacture can return to the market as new extrusion feedstock. This secondary aluminium supports the production of aluminium profiles used in future façade, window and door systems.

By maintaining alloy quality and traceability throughout the recovery process, aluminium from the built environment can remain in productive use across multiple life cycles. Senior Architectural Systems publishes Environmental Product Declarations (EPDs) to provide transparent information about the environmental performance of its products and support project sustainability reporting. [R9]

What you can do

- Request the latest SAS Environmental Product Declarations (EPDs) and include them within project evidence packs.
- Specify systems with maintainability and future disassembly in mind wherever feasible.
- Record installed product information to support future recovery and circular reuse.

Evidence and data to capture

- SAS EPDs and supporting product documentation. [R9]
- As-built product schedules and specification records, supporting future recovery planning.

Avoid

- Treating circularity as a late stage site consideration rather than a design and specification requirement.

Circular recovery pathway: from refurbishment to new systems

8

Stage 8: Back to buildings: Records and future recovery

Longer service life, effective maintenance and clear records support the next circular loop.

What happens

The circular value of aluminium systems is maximised when products remain in service for as long as possible and when accurate information is retained throughout the building's life. Operation and Maintenance (O&M) documentation, as-built records and system schedules help ensure aluminium façade systems can be properly maintained, refurbished or recovered when future works take place.

By maintaining clear records and product information, building owners and project teams can support responsible refurbishment and enable high-quality material recovery when systems eventually reach the end of their service life.

Senior Architectural Systems website

www.seniorarchitectural.co.uk

CAB Closed Loop Recycling Scheme

c-a-b.org.uk/closed-loop-recycling

What you can do

- Include EPDs and circularity evidence within O&M manuals and project handover documentation.
- Maintain records of system type, location and any modifications throughout the building's lifecycle.
- Engage Senior Architectural Systems early when planning refurbishment, upgrade or replacement programmes.

Evidence and data to capture

- O&M manuals including system schedules and maintenance guidance.
- Circularity evidence packs, including weights, tickets and photographic records.

Avoid

- Loss of records over the building's life, which can reduce the quality of future recovery.

Stakeholder guide: roles and responsibilities

Closed-loop recycling relies on collaboration across the project supply chain. Each stakeholder plays a role in protecting material quality, maintaining traceability and ensuring recovered aluminium can return to productive use.

The table below outlines typical responsibilities and the evidence that may be required.

Stakeholder	Typical responsibilities	Evidence / outputs
Client / Developer.	Set waste and circularity expectations; require evidence in handover.	Employer's Requirements; sustainability brief.
Architect / Specifier.	Specify SAS systems with EPDs; include end-of-life and dismantling intent.	Specification notes; drawings; schedules.
Main Contractor.	Embed segregation and recovery within the site waste management plan and coordinate collection logistics.	SWMP; photos; collection records.
Fabricator.	Support segregation of aluminium offcuts and provide relevant production or waste records.	Offcut records; waste tickets; QA notes.
Demolition Contractor.	Carefully remove systems and segregate aluminium to avoid mixed-metal contamination.	Segregation photos; weights/ volumes.
Waste Contractor / Processor.	Collect and process; provide documentation for traceability.	Waste transfer notes; processor confirmation.
SAS.	Provide guidance; connect CAB scheme; supply EPDs and documentation.	Brochure; EPDs; stakeholder brief.
CAB.	Provide scheme framework and coordination across members.	Scheme documentation; guidance materials.

To support circular recovery and sustainability reporting, projects should maintain a simple evidence pack documenting material recovery and recycling outcomes.

Stakeholder guide: roles and responsibilities

Evidence pack checklist (project-specific)

- SAS EPD(s) for the specified system(s), including confirmation of declared unit and boundaries (glazing excluded).
- CAB Closed Loop Recycling Scheme documentation: partner route, collection records and chain-of-custody evidence (where available).
- Waste transfer notes / weighbridge tickets and photos of segregated aluminium (before collection and at handover, where permitted).
- Design/specification notes that support circularity: planned disassembly, fixings and separation of materials at end-of-life.
- Responsible sourcing evidence: SAS BES 6001 certification and supplier declarations (where relevant).
- LCA reporting: record product stage emissions (A1–A3) and Module D benefits separately to avoid double counting.



Project checklist and example documentation

Putting circular recovery into practice requires clear actions at each stage of the project lifecycle.

The checklist below summarises typical tasks and documentation that can help teams implement closed-loop recovery on real projects.

Design and procurement		Site delivery		End-of-life / refurbishment	
☐	Include EPD requirements in specification.	☐	Segregate aluminium streams and label containers.	☐	Commission pre-refurbishment / pre-demolition audit.
☐	Define circularity / recovery expectations.	☐	Protect stored aluminium from contamination or mixed metals.	☐	Engage SAS early on recovery route and logistics.
☐	Plan for maintainability and disassembly.	☐	Capture weights and documentation at each collection.	☐	Dismantle and sort aluminium, glazing, gaskets.
☐	Brief BREEAM assessor early and align evidence needs.	☐	Record photographs and keep evidence with project ID.	☐	Provide final evidence pack with weights and destinations.

Example recovery record template (copy into project documentation):

- Project name / ID
- Site address
- Project contact
- Programme (start–finish)
- Estimated aluminium quantity (kg/tonnes)
- Segregation method (containers / stillages)
- Collection records (dates, weights, tickets)
- End destination / processor (where known)

Tip: Store photographs, tickets and notes in a single project folder and reference the location in the recovery record. This simplifies sustainability audits and certification evidence.

Implementation workflow: what to do, when

Closed-loop recovery is most effective when built into normal project controls. The workflow below shows how the actions outlined in the project checklist can be integrated across the project lifecycle, from design through to refurbishment or demolition.

Suggested workflow (adapt as needed):

1

Design stage

Select SAS systems supported by Environmental Product Declarations (EPDs) and include an end-of-life recovery intent statement within project specifications. Early design decisions can support future dismantling and material recovery.

2

Pre-construction

Confirm the proposed recovery route and include segregation requirements within demolition or strip-out packages. Align responsibilities across the project team and confirm evidence requirements where sustainability frameworks such as BREEAM apply.

3

Construction

Manage aluminium offcuts and packaging carefully during installation. Keep aluminium streams separate from other materials and capture photographs, weights and documentation to support traceability.

4

Handover

Include EPDs, system schedules and the end-of-life recovery appendix within the O&M manuals. Retaining clear records helps future project teams understand how systems can be maintained, refurbished or recovered.

5

Refurbishment or demolition

Follow the circular recovery pathway outlined in Steps 1–8 and retain records of recovered materials for sustainability reporting and certification evidence.

This provides a repeatable, auditable approach that can be applied consistently across projects.

BREEAM mapping: materials and waste credits (indicative)

Many projects using SAS systems pursue sustainability frameworks such as BREEAM. The guidance below outlines how the circular recovery approach described in this brochure can support common BREEAM materials and waste credits. BREEAM assessment routes and credits vary by scheme and building type, so the mapping below is indicative and should be confirmed with the project's BREEAM Assessor.

BREEAM area	How SAS closed loop recycling can help	Typical evidence
Mat 01 – Life cycle impacts.	Use SAS EPDs within whole-building LCA to demonstrate informed material choices.	EPDs; LCA model outputs.
Mat 03 – Responsible sourcing.	Support procurement teams with product and supply chain documentation; provide information to help populate Mat 03 tools (where applicable). SAS holds BES 6001 Responsible Sourcing certification and can provide supporting evidence on request.	BES 6001 certificate [R7]; supplier declarations; CAB scheme evidence / chain of custody documentation (project specific, where available).
Wst 01 – Construction waste management.	Segregation, collection records and defined recovery routes support responsible waste management and improve reporting.	SWMP; weights; waste transfer notes.
Wst 06 – Functional adaptability / design for durability (scheme-dependent).	Long service life and circular design principles support resource efficiency.	Design statements; O&M appendix.

Reference: BREEAM categories (BRE) and CAB scheme information. Credit applicability varies by scheme and version; all BREEAM references should be confirmed with the projects appointed Assessor. [R6]

BREEAM evidence pack (suggested)

Capturing clear project evidence is as important as implementing the right practices on site. The checklist below helps minimise evidence gaps at handover and supports BREEAM documentation requirements.

Suggested evidence to retain for BREEAM documentation

- SAS Environmental Product Declarations (EPDs) and product schedules for all aluminium systems specified on the project.
- Site waste management plan (or equivalent) documenting the approach to material segregation and recovery.
- Photographic evidence showing dedicated aluminium storage areas and segregation practices on site.
- Collection tickets and waste transfer notes referencing aluminium streams and recovered quantities.
- Confirmation of the processing route, where available, through CAB scheme partners or associated recycling facilities.
- Documentation describing the end-of-life recovery approach and relevant contact routes, included within project handover or building information records.

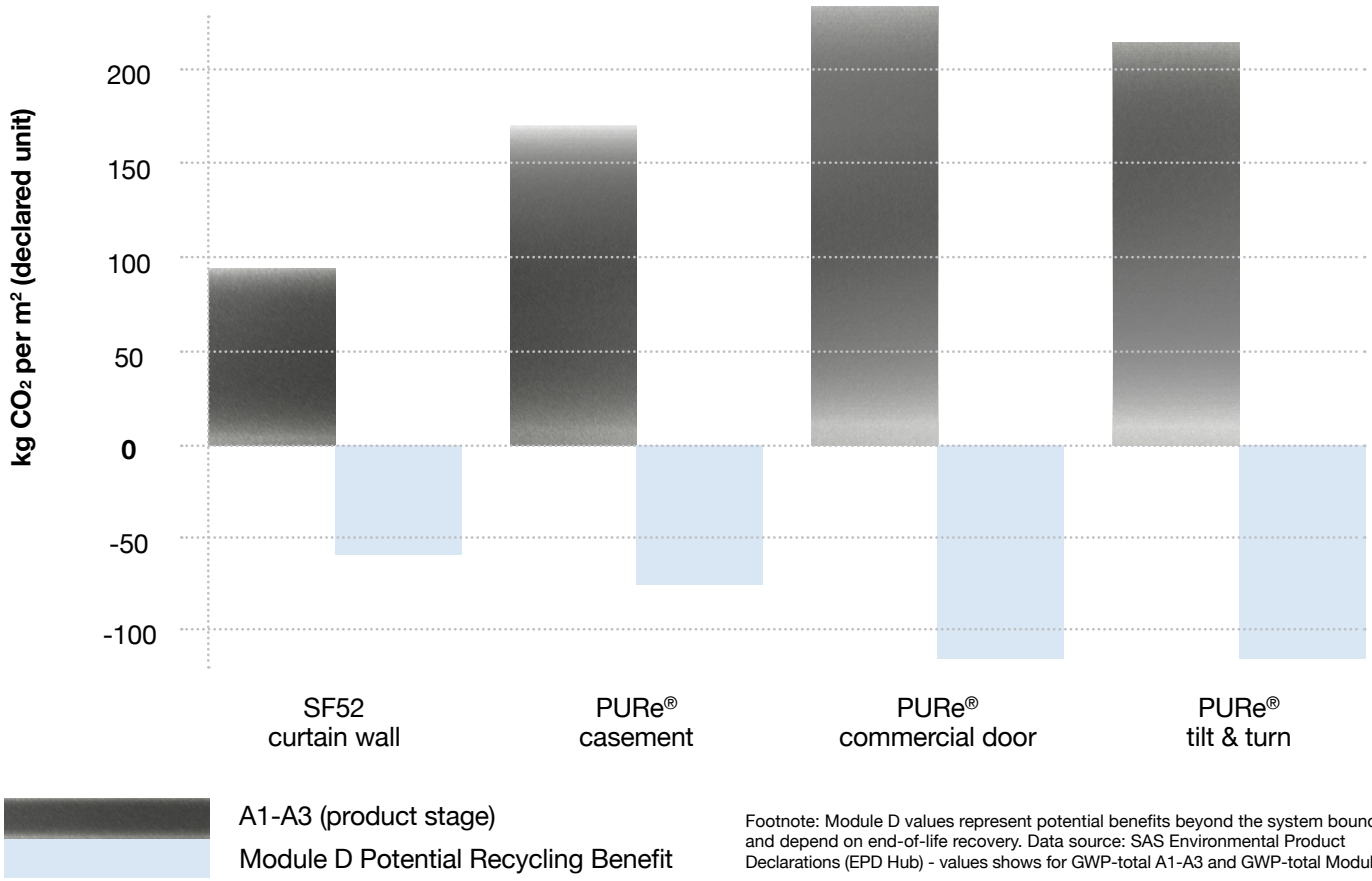
Where project outcomes go beyond standard practice, teams may also consider BREEAM Innovation credits, subject to scheme rules and Assessor judgement.



Deeper carbon analysis: Scope 3 and Module D benefits

Increasing recycled content and improving end-of-life recovery can influence both upstream embodied carbon (Scope 3) and potential end-of-life benefits represented in Module D. Environmental Product Declarations (EPDs) provide a useful starting point for comparison, while closed-loop recovery schemes help improve confidence in recovery outcomes and material quality.

EPD highlights: product-stage carbon and potential recycling benefits



Footnote: Module D values represent potential benefits beyond the system boundary and depend on end-of-life recovery. Data source: SAS Environmental Product Declarations (EPD Hub) - values shows for GWP-total A1-A3 and GWP-total Module D.

How to apply this in project carbon assessments

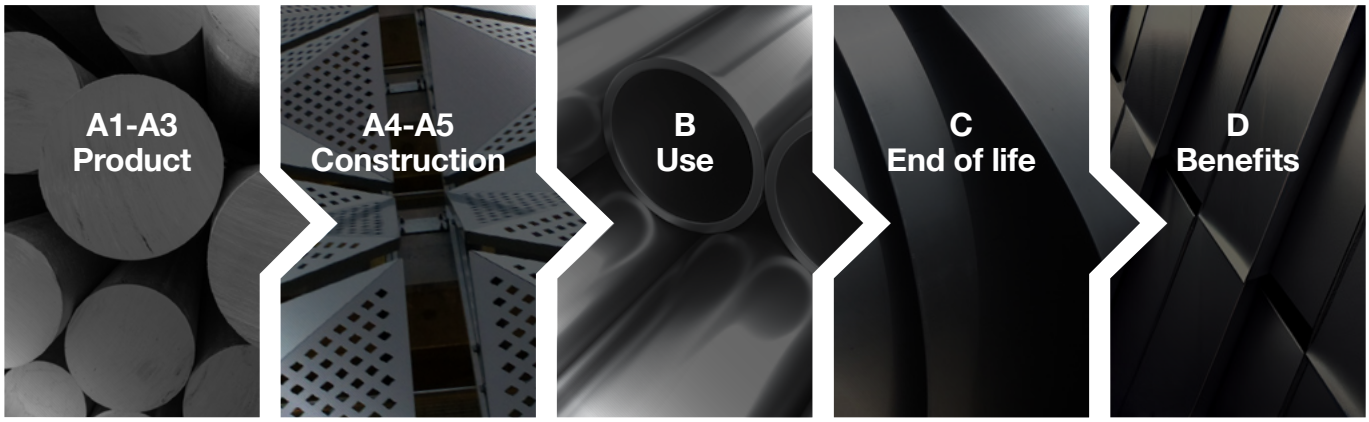
Practical guidance for project teams:

- Use EPD A1–A3 values when comparing product-stage embodied carbon and ensure options are assessed on a like-for-like basis.
- Treat Module D values as potential benefits, recognising that outcomes depend on actual recovery and recycling performance. Closed-loop recovery routes can improve confidence in these outcomes.
- Prioritise clean segregation and material quality, as contamination reduces recycling yield and associated carbon benefits.
- Capture clear project evidence so carbon and waste outcomes can be reported transparently.

What EPDs tell us

Environmental Product Declarations (EPDs) provide independently verified life cycle assessment (LCA) information in a consistent format. They enable designers and contractors to understand embodied carbon impacts and to use reliable product data within whole-building assessments.

EN 15804+A2 life cycle modules (simplified)



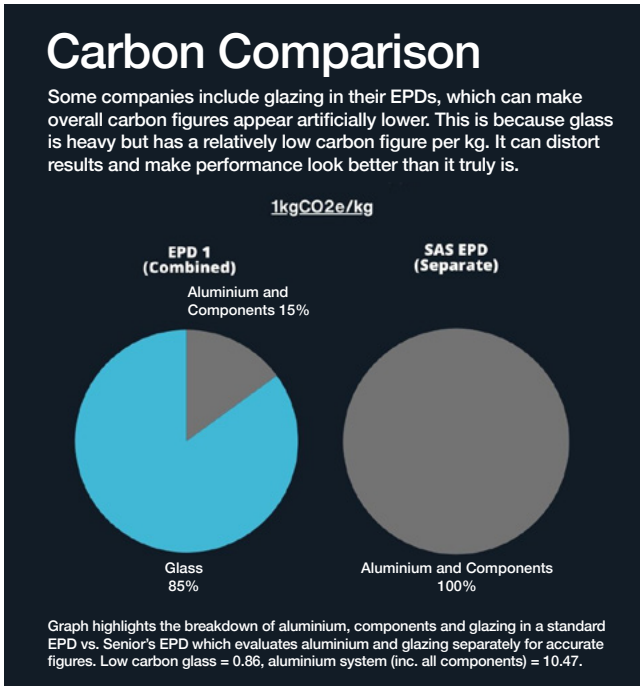
In aluminium systems, end-of-life recycling can generate benefits beyond the system boundary (Module D), depending on modelling assumptions and recycling routes. Closed loop routes strengthen the credibility of this pathway by improving segregation, quality and traceability.



What EPDs tell us

EPD highlights for SAS systems (declared unit)

System (EPD)	Declared unit mass (kg)	Secondary material outputs (%)	GWP-total A1-A3 (kg CO_2e/m²)	GWP-total A1-A3 (kg CO_2e/kg of system)
SF52 Curtain Wall Zone Drained.	8.8	76.5	93.3	10.6
PURe® Casement.	16.1	82.3	166.0	10.3
PURe® Commercial Door.	17.4	86.8	229.0	13.2
PURe® Tilt & Turn.	22.1	82.4	219.0	9.9



EPD comparability note (glazing excluded)

- SAS EPDs exclude glazing from the declared unit to support robust, like-for-like comparison of aluminium systems.
- Glazing is specified and assessed separately and can be recycled through glazing manufacturer schemes (where available) or accredited recyclers.
- Secondary material outputs shown are taken from published EPD Environmental Data Summary indicators and are presented here as examples. Further SAS EPDs are available, including additional circularity indicators and secondary material flows.
- SAS EPDs are third-party verified and prepared in line with EN 15804+A2 and ISO 14025, and are maintained to remain aligned with the latest applicable standards and PCR updates.

Source: Senior Architectural Systems Environmental Product Declarations (EPD Hub) [R9].

ESG, social value and biodiversity

SAS recognises that sustainability extends beyond carbon alone. Our approach combines circular design, responsible sourcing and transparent reporting with robust carbon management, social value initiatives and circular material recovery.

Through Environmental Product Declarations (EPDs), science-based climate targets and a structured biodiversity and governance framework aligned with ASSA ABLOY reporting, we aim to deliver measurable environmental and social outcomes across the product life cycle.

SAS commitment: ESG principles embedded across our circularity approach



Environmental

- Lower embodied carbon in products and systems
- Circular design and reuse of materials
- Efficient material use and waste reduction



Social Value

- Skills development and local employer pathways
- Responsible supply chain engagement
- Community partnerships and social initiatives



Governance

- Traceable material flows
- Verified environmental reporting
- Ethical and responsible business practices



Biodiversity

- Reduced virgin material extraction
- Lower pressure on ecosystems
- Support for nature-positive outcomes

How closed-loop recycling supports wider ESG outcomes

Circular material recovery contributes to wider environmental, social and governance outcomes.

Benefits beyond carbon:

- Social value: responsible installation guidance, skills development around material segregation, façade dismantling and circular construction practices, and improved capability across the façade supply chain.
- Governance: improved traceability and auditable evidence help customers demonstrate due diligence and transparency.
- Biodiversity: reducing demand for virgin material extraction helps lower pressures on ecosystems associated with raw material supply.

Transparency, assurance and references

This brochure is supported by third-party verified Environmental Product Declarations (EPDs) and publicly available scheme information. Where performance values are quoted, the primary source is the relevant EPD.

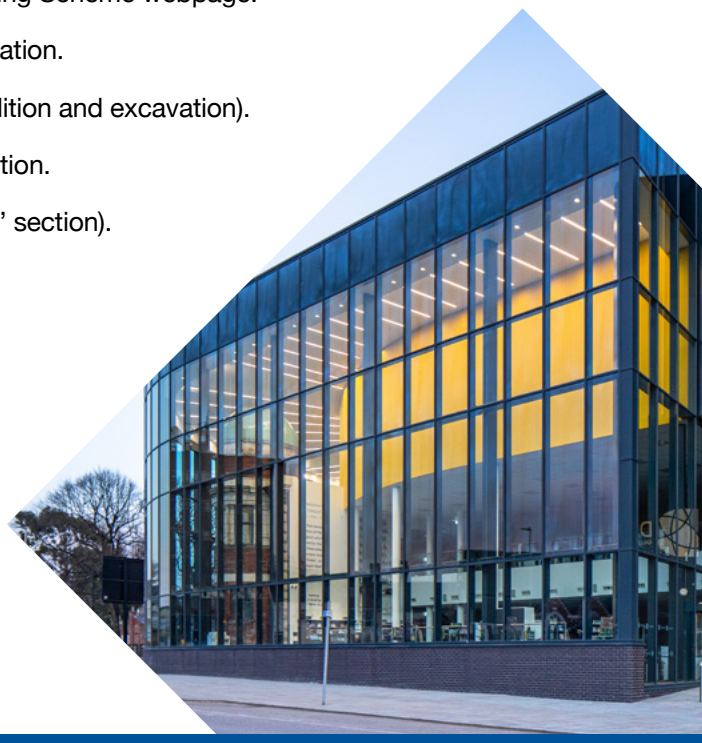
Standards and assurance

Key points:

- SAS EPDs are third-party verified and prepared in line with EN 15804+A2 and ISO 14025. They are reviewed and updated as required to remain aligned with the latest applicable standards and PCR updates.
- EPDs provide consistent reporting across life-cycle modules (A1–A3, A4–A5, B, C and D), enabling robust comparison within a life cycle assessment (LCA) framework.
- Charts and infographics used in this guide are original to SAS or supplied for brochure use, and no third-party imagery has been used.

Document references

- Senior Architectural Systems EPD – SF52 Zone Drained Curtain Wall System (EPD Hub).
- Senior Architectural Systems EPD – PURe® Casement Window System (EPD Hub).
- Senior Architectural Systems EPD – PURe® Commercial Door System (EPD Hub).
- Senior Architectural Systems EPD – PURe® Tilt & Turn Window System (EPD Hub).
- Council for Aluminium in Building (CAB) – Closed Loop Recycling Scheme webpage.
- International Aluminium Institute – Aluminium Recycling information.
- UK Government – UK Statistics on Waste (construction, demolition and excavation).
- UNEP – 2022 Global Status Report for Buildings and Construction.
- Senior Architectural Systems – Company website (‘Choose Us’ section).



FAQs and contact

Does the closed loop scheme only apply to SAS systems?

No. The recovery route focuses on architectural aluminium systems at end of life. If other aluminium systems (including non-SAS) are present on a project, segregation and quality control are still essential. Please contact SAS to discuss project scope and feasibility.

What materials are included in recovery?

The scheme primarily focuses on aluminium, as it represents the largest proportion of the system and delivers the greatest environmental benefit when recycled. Other components and materials can also be recycled through our waste partners. Materials must be segregated during strip out to maximise recovery. Please get in touch for guidance on segregation and recycling routes.

How does this relate to BREEAM?

EPDs and waste management evidence can support BREEAM credit categories such as Mat 01 and Wst 01 (depending on scheme and version). Always confirm requirements with your assessor. [R6] [R8]

Can painted or powder-coated aluminium be recycled?

Yes. Coated aluminium can be processed and remelted; good segregation and processing are still important for quality outcomes.

Do thermal breaks, gaskets and seals prevent recycling?

No. Non-metal components can be separated during processing. Dismantling and sorting on site improves downstream efficiency.

When should we engage SAS?

As early as possible — ideally at project planning stage (refurbishment audit / demolition planning) so that logistics, segregation and documentation requirements can be integrated into scopes and method statements.

What evidence should we keep?

At minimum: photos of segregation, waste transfer notes/collection tickets, and confirmation of routing to recycling where available.

Get in touch

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For circularity and closed loop recycling enquiries, contact your SAS Architectural Advisor and reference the CAB Closed Loop Recycling Scheme.

Reference Summary Table

Ref	Source	Description	Where Used & Pages
R4	International Aluminium Institute.	Aluminium recycling energy savings (~95% vs primary production).	Step 6 – Remelting & recycled billet. (14)
R5	Council for Aluminium in Building (CAB) – Closed Loop Recycling Scheme.	Scheme framework, recycling volumes, alloy segregation, traceability approach.	CAB partnership page, Steps 2, 4 & 5. (7) (10) (12) (13)
R6	BRE Global Ltd – BREEAM UK Construction Technical Manual.	Basis for BREEAM credit mapping (Mat 01, Mat 03, Wst 01, Wst 06).	BREEAM mapping & FAQs. (21) (28)
R7	BES 6001 Responsible Sourcing Certification (SAS).	Responsible sourcing certification supporting procurement and Mat 03.	BREEAM mapping. (21)
R8	BREEAM Wst 01 Construction Waste Management Guidance.	Waste auditing, segregation, and reporting requirements.	Step 1 and FAQs. (9) (28)
R9	Senior Architectural Systems EPDs (EPD Hub).	Product-specific EPD data, LCA modules, declared unit, carbon metrics.	Step 7, EPD section, carbon analysis. (15) (23) (25)
R10	UNEP – Global Status Report for Buildings and Construction (2022).	Global buildings sector energy use and CO_2 emissions data.	Selected statistics (global and UK). (5)
R11	UK Government – UK Statistics on Waste.	UK construction, demolition and excavation waste data.	Selected statistics (global and UK). (5)

All references are current at time of publication. SAS Environmental Product Declarations are third-party verified and maintained in line with the latest applicable standards.



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