Environmental Audit Committee
call for evidence:
Sustainability of the built environment

This evidence is submitted on behalf of the following organisations, representing the interests of metals in the built environment:

- British Construcational Steel Association
- Council for Aluminium in Building
- Galvanizers Association
- Steel Construction Institute
- UK Steel.

1. We recognise the need to decarbonise and the important role that the built environment must play, both in terms of operational and embodied carbon reductions.
2. Carbon is however only one impact within the sustainability agenda, and the broader social and economic implications must be considered alongside short-term measures to reduce carbon emissions.
3. The title of the call for evidence is ‘Sustainability of the built environment’, however it mainly focusses on carbon emissions reduction. The wider ramifications on low-carbon design choices need to be considered more holistically within the broader sustainability context.
4. We feel that the call for evidence sets out several preconceptions and misconceptions concerning how best to address sustainability of the built environment, even implying that man made materials are somehow part of the problem. That is not the case.
5. Metals are part of the solution, and we would be pleased to provide further evidence to the committee to this effect. The metals sectors have developed credible decarbonisation roadmaps based on multiple low and zero carbon technological solutions and in line with UK national carbon reduction targets.
6. The important role played by metals within our built environment should not be forgotten or understated. Yes, it is important that we find ways of meeting our net zero targets, but this needs to be achieved via an “eyes wide open” strategy, rather than seeking a fast fix that may quickly unravel with unintended consequences.
7. The call for evidence refers, somewhat ambiguously, to ‘alternative materials’. If this means bio-based products, the fundamental and long-term performance of these materials in buildings needs to be proven (notably durability, long-term structural performance and fire resistance) alongside their apparent initial low-carbon impact.
8. Therefore, the call seems to be unfairly slanted in favour of bio-based materials and products. While we appreciate the contribution of these materials in some building typologies to decarbonise the built environment, the wider supply ramifications of substituting traditional construction materials, including metals, need to be carefully considered. For example, the UK has insufficient land area to sustainably grow sufficient timber to substitute these traditional materials. We consider the statement in the call that “there is no incentive to move away from concrete and steel” as a leading statement.
9. Due to their durability, reusability and recyclability, metals already fit into a circular model for materials and can be used to lower the carbon metrics of construction when viewed holistically. Metal construction products also have great potential for reuse, as opposed to recycling by remelting, and significant work has been done to promote this by the sector. Further incentives are needed to make reuse common practice.

10. The core principals of a Circular Economy\(^1\) can easily be met using metals - they offer:
   a. durability – with in some cases over 100-year lifespans\(^2\)
   b. high levels of reusability\(^3\), when appropriately designed
   c. ease of remanufacture and reforming
   d. high end of life recycling rates – typically over 90%\(^4\).

11. It is acknowledged that the metals sector needs to introduce strategies to decarbonise production of metals using virgin material – and it is investing heavily in this via research and pilot demonstration projects in the UK and globally. Particularly relevant to UK steelmaking are the industrial clusters proposed in South Wales and Scunthorpe. To commercialise these low carbon technologies, the sector needs the support of government to have confidence in its future role within the built environment. This will not only benefit the environment but also the social and economic security of the UK and the many that work in the metals value chains.

12. Metals have an important role to play in developing the renewable energy and transport infrastructure required to decarbonise the UK economy. Specific examples dependant on metals include: HS2, wind turbines, solar harvesting and other renewable energy technologies including tidal, hydrogen production facilities and networks, nuclear power, and biomass plants.

13. An important way forward is to design more efficient structures, selecting the most appropriate materials that offer the best solutions. This may mean using a combination of materials rather than an overt focus on a single material type. Innovative, effective material choice should be encouraged by using appropriate assessment techniques.

14. The development and adoption of robust Life Cycle Assessment (LCA) techniques is key in this regard, as they can enable an open and complete assessment of the options, but this assessment must be in the context of the complete life cycle – “cradle to grave” plus Module D\(^5\), using the language of EN 15804, which is the appropriate basis for any sustainability assessment.

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1 A Circular Economy is defined in London Plan Policy SI7 ‘Reducing waste and supporting the Circular Economy’ as one where materials are retained in use at their highest value for as long as possible and are then reused or recycled, leaving a minimum of residual waste.

2 “Galvanized Steel and Sustainable Construction: Solutions for a Circular Economy” published by European Galvanizers Association in collaboration with industry associations from across Europe, draws on academic research and examples of best practice from across Europe. It explains clearly how galvanized steel can help the construction sector adapt to a net zero future. (https://www.galvanizing.org.uk/publication/galvanizing-and-sustainable-construction/)

3 For the reuse of metal structures please see for example: “Structural Steel Reuse. Assessment, testing and design principles (P427)” (2019) and “Guidance on Demountable Composite Construction Systems for UK Practice (P428)” (2020), both published by SCI.


15. Module D (the reuse, recovery and recycling phase) is a key element in supporting a sustainable circular economy in the construction sector, and should be mandated in any assessment of embodied carbon, along with targets for Module D.

16. When a building reaches end of life some metal products can be directly re-used, and the functional life of these parts can be extended.

17. If not re-used, most metal products are recycled. Several studies have shown that more than 95% of the metal products used in buildings in the UK and Europe are collected at their end-of-life and either reused or recycled.

18. Recycled metals and alloys can have the same or better properties compared with the original material. Because metals do not degrade, this ensures that they can be recycled and used for the same application, with the same quality, again and again.

19. Building regulations should take a more holistic view of the built environment, with a view to including a consideration of whole life sustainability.

20. It is important that through the Future Homes Standard and Future Buildings Standard a focus on improving the insulation performance of buildings for the heating season does not have unintended consequences, both in terms of the embodied carbon but also in terms of the wider performance of the building including, with respect to glazed structures, the role of solar gains in the heating season and increased daylighting, ventilation and occupant wellbeing by making a connection with the outside world – all of which have been brought into sharp focus during the COVID-19 pandemic. There is no “one size fits all”!

21. In the modular language of EN 15804, Part L of the building regulations (Conservation of fuel and power) currently considers only Module B6. By considering the whole life cycle including Module D, targets could be established for the remaining modules as part of the regulations, i.e. A, C and D. Thereby promoting the circular economy.

22. A national programme for the verification of sustainability data should be initiated. This is increasingly important to ensure a level playing field as multiple software tools to calculate embodied carbon emerge.

23. We do not underestimate the complex nature of this topic. As well as the assessment of the environmental factors, social and economic factors should also be taken into account. This is important when considering the impact of imported versus domestically sourced materials, for example.

Who we are

British Constructional Steel Association

The British Constructional Steel Association Ltd (BCSA) is the UK national organisation for the steel construction industry: its member companies undertake the design, fabrication and erection of steelwork for all forms of construction in building and civil engineering. Industry members are those principal companies involved in the direct supply to all or some members of components, materials or products. Corporate members are clients, main contractors, professional offices, educational establishments etc., which support the development of national specifications, quality, fabrication and erection techniques, overall industry efficiency and good practice.

6 For example, from ‘Circular Economy Statement Guidance’, Mayor of London, draft for consultation, October 2020, para 4.4.32: “Note that many production activities that are currently referred to as ‘recycling’ are in fact ‘downcycling’. Examples include solid timber being turned into chipboard, or bricks being crushed into aggregate. In a circular economy, the aim should always be to ensure that the material is brought back to a comparable or higher level of quality and value.”
Council for Aluminium in Building

The Council for Aluminium in Building (CAB) was formed in 1994 by bringing together three existing UK-based trade associations: the Aluminium Window Association, the Architectural Aluminium Association and the Patent Glazing Contractors Association. Its members include fabricators, installers, systems companies, consultants and many specialist product supply and manufacturing companies. CAB is now the largest UK aluminium-in-building trade association, with over 100 members across the supply chain. The association is highly proactive in a number of aluminium and sustainability initiatives in the UK and internationally.

Galvanizers Association

Founded in 1949, Galvanizers Association is the representational body for the hot dip galvanizing industry in the UK and Ireland. Its members process more than 95% (by tonnage) of the regions’ batch galvanized steel requirements.

It is the source of free technical information and advice on corrosion protection of steel by hot dip galvanizing and the galvanizing industry. Its services include free technical advice on design, specification, and performance of galvanized steel structures for construction professionals, clients, and government bodies.

GA publishes free technical literature and participates in standards work at a UK, European and global level.

Steel Construction Institute

SCI (the Steel Construction Institute) has been a trusted, independent source of information and engineering expertise globally for over 30 years, and remains the leading, independent provider of technical expertise and disseminator of best practice to the steel construction sector. We support everyone involved in steel construction: from manufacturers, consulting and design engineers, architects, product managers, commercial directors right through to industry groups and peers. SCI Members rely on us to deliver numerous high-quality benefits, the most valued of which is independent, technical advice available by phone or online – whatever the subject. We are committed to offering and promoting sustainable and environmentally responsible solutions.

UK Steel

UK Steel, a division of Make UK, is the trade association and voice of the UK steel industry. It represents all the country’s steelmakers and a large number of downstream steel processors.

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