THE ECOLOGICAL IMPACT OF BUILDING MATERIALS: VISION AND RECOMMENDATIONS

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The UK Green Building Council, an association that promotes the sustainable transformation of the built environment, makes available an ad-hoc website that helps us to complete the picture of the impacts and footprint of the building sector on ecosystems on an ad-hoc website that also includes recommendations.

The platform focuses on different activities through which the built environment impacts on nature and biodiversity:

- **Energy Transition:** The energy transition has its own impacts that are important to address, such as batteries and solar photovoltaic panels. Rare materials such as lithium, nickel, cobalt or even magnets are crucial, but have negative impacts on nature related to their mining.
- **Construction:** The construction industry is the most resource-intensive sector of the world economy and is responsible for 50% of all extracted resources. It has direct ecological impacts, such as land use, and embodied impacts, such as habitat destruction due to aggregates from quarries.
- **Infrastructure:** Infrastructure projects carry high on-site impacts, as well as embodied impacts due to their size and material intensity.
- **Equipment:** Business equipment is a very resource-demanding aspect, and this sector is characterised by a short lifespan and frequent turnover, resulting in excessive consumption of materials and generation of substantial waste.

In order to mitigate these impacts, the platform provides several general recommendations, both at organisational and project level. These are a good starting point for a more holistic approach to nature and biodiversity for stakeholders in the built environment:

- **Prioritise the best use of existing assets:** Reuse, refurbish and maintain existing assets to eliminate the need for new building materials in the first place.
- **Prioritise reused materials and equalise availability:** When maintaining or reusing an existing asset is not an option, reusing materials and products is the next best option.
- **Prioritise recycled and bio-based materials and equalise availability:** The use of recycled materials is limited by the metabolism of the built environment and must be accompanied by renewal rates both in the technical cycle, through the availability of recycled material, and in the biological cycle, through regeneration rates of biogenic materials. Specifying recycled materials above the availability dictated by recycling or regrowth rates will not lead to better results.
- **Optimise design:** Reduce the amount of building materials required by design, e.g. through optimised structural design and simplified forms, and plan for future flexibility, recovery and reuse.
- **Regenerative or low-impact material extraction:** Limit material extraction to sites and processes that actively seek to minimise disturbance to existing ecosystems, e.g. by

maintaining habitats and ecological corridors, arranging windows and extraction rates to allow ecosystems to recover, and restoring habitats and ecosystems where damage occurs.

- **Avoid materials:** If all of the above mitigation measures are impossible, explore alternative materials and apply the hierarchy again.