Responsible Refurbishment
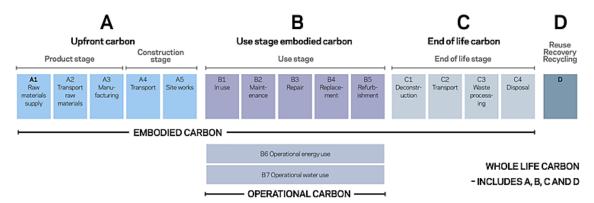
Net Zero Built Environment and the Role of Refurbishment:

In 2019, the UK became the first major economy to pass a law to become net zero emissions by 2050. Since then, the movement towards reducing carbon emissions in the built environment sector has accelerated significantly.

Several organisations have led the creation of targets and frameworks to enable the transition towards net zero in buildings, including: The UK Green Building Council (UKGBC); The London Energy Transformation Initiative (LETI); and The Royal Institute of British Architects (RIBA).

Whole life carbon is a concept that encapsulates operational and embodied carbon emissions from a building and allows for its full impact to be assessed over its lifetime. This allows for the impact of each design decision to be assessed at a greater length and for most carbon efficient solutions to be selected. With this mindset, refurbishing buildings and extending their lifespan should be prioritised over building new buildings. This should be combined with approaches that reduce operational carbon. The diagram below shows the different elements of whole life carbon assessment.

*Source: Whole Life Carbon Network

LETI and RIBA have created several energy intensity and embodied carbon targets for different asset classes. UKGBC advocates for all new buildings to be net zero carbon in operation by 2030. It also advocates for significant reduction in embodied carbon and for all buildings to be net zero by 2050.

Khasha Mohammadian, Carbon Intelligence, June 2020

Key Issues/Considerations

- Buildings should be designed to be efficient (reduce operational and embodied carbon) prior to the use of renewable energy and offsets.

- Energy intensity targets for different asset classes are a key part of this topic and currently under development (targets for offices, residential and schools have already been developed).

- Outcomes should be monitored, validated and reported annually.

- Material selection needs to consider a balanced whole life carbon view.

- The energy performance gap has been a significant barrier to delivering truly efficient buildings.

- Buildings with longer lifecycle, greater flexibility and durability have lower environmental impacts.

- A combined effort from all parties, including users is required to deliver net zero carbon buildings.

- Removing fusel fuels, fabric upgrades and natural ventilation are key changes required to enable existing buildings to meet net zero standards.

Links

- Available at: https://www.ukgbc.org/ukgbc-work/advancing-net-zero/

- Available at: https://www.worldgbc.org/advancing-net-zero

- Available at: https://www.leti.london/cedg

- Available at: https://www.architecture.com/about/policy/climate-action/2030-climate-challenge

- Available at: https://www.rics.org/uk/upholding-professional-standards/sector-standards/building-surveying/whole-life-carbon-assessment-for-the-built-environment/

- Available at: https://www.london.gov.uk/what-we-do/planning/london-plan/new-london-plan

- Available at: https://eccolab.co/eccolab/rapierserver/index

- Available at: https://www.oneclicklca.com/