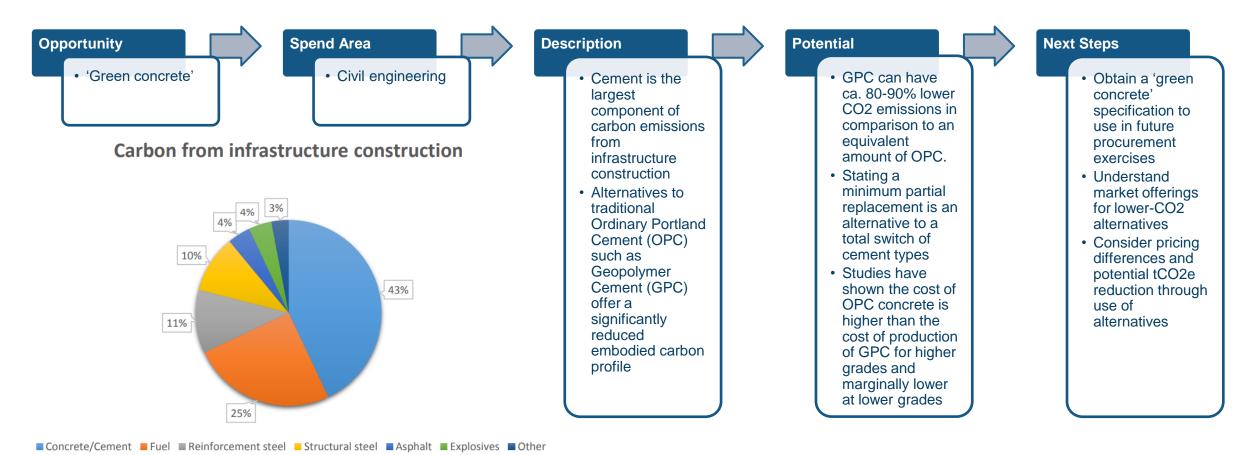
CERP3 Decarbonization Procurement family 01

Civil engineering

Current Situation in Procurement family 01 – Civil Engineering

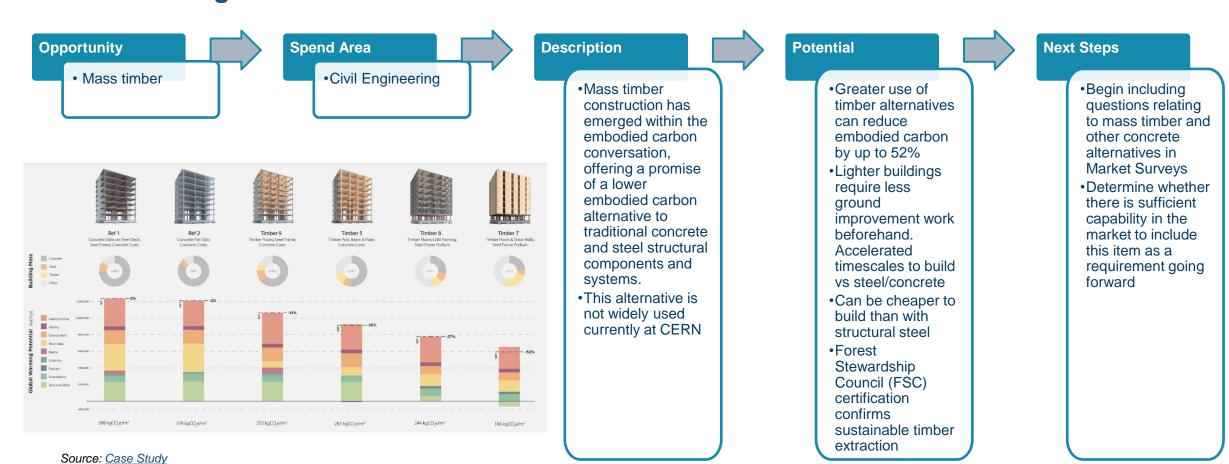
- These suppliers are a mixture of designers and contractors.
- Procurements for designers are adjudicated using Best Value for Money procedure, whereas procurements for contractors are adjudicated using the Lowest Compliant Bid procedure.
- ► There has been limited inclusion of environmental factors within procurement procedures to date.
- Demand and resultant spend is a mixture of routine construction, and construction required due to major projects.

When procuring goods and services in PF 01, seek opportunities to apply the following decarbonisation levers



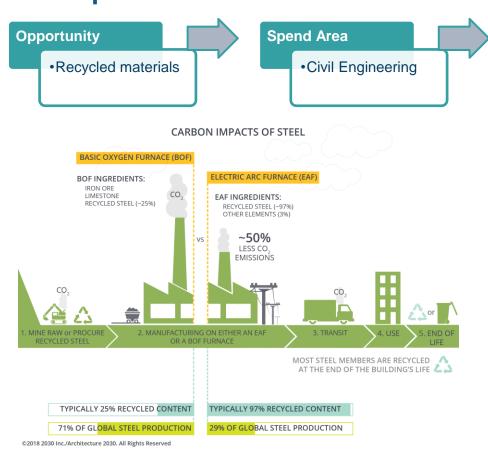
Source: International Case Study

Explore the use of mass timber construction as an alternative method to steel/concrete structural design and build



IPT-PI-SQ/Jan 2024

Explore the use of recycled materials, including steel with a higher percentage recycled makeup



Description

- Recycled materials such as brick, metal, wood and broken concrete can make a significant difference to embodied carbon emissions.
- •These salvaged materials have a lower carbon footprint as the carbon used to make them has already been spent.

Potential

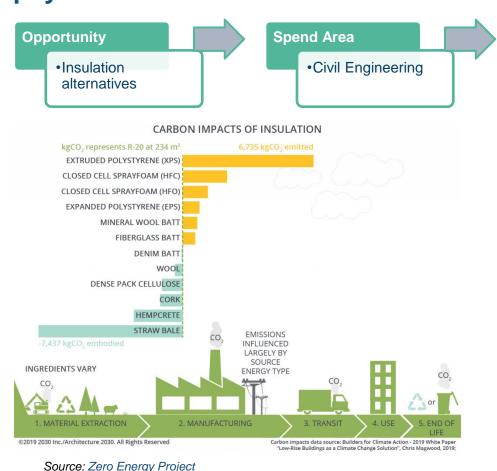
•As an example, the Electric Arc Furnace production method of steel emits ~50% lower emissions than Basic Oxygen Furnace method, given a significantly higher recycled steel content

Next Steps

- Begin including questions relating to recycled materials in Market Surveys
- Consider feasibility, pricing differences and potential tCO2e reduction through use of recycled materials
- Include this provision more widely in tender documentation as agreed

Source: Carbon Smart Materials Palette

Explore insulation alternatives, focussing on both the embodied carbon impact and the carbon payback time



Description

- •Embodied carbon impact is determined during production, with traditional oilbased polymers having blowing agents that generate a higher embodied carbon profile
- •Carbon payback time refers to the time taken for during a building's life, when utilizing natural gas for heating, the avoided carbon emissions of one inch of insulation outweighs the embodied carbon

Potential

- •Embodied carbon of insulation products can be significantly reduced based on the Global Warming Potential of the blowing agent utilised
- Carbon payback time can be reduced by 44% by using insulation with greater efficiency
- •The polystyrene alternatives provide the recommended insulation R value with a fraction of the carbon footprint

Next Steps

- •Begin including questions relating to insulation alternatives, embodied carbon and carbon payback in Market Surveys
- Consider pricing differences and potential tCO2e reduction through use of alternatives
- Include this provision more widely in tender documentation as agreed

Source. <u>Zero Energy i Toje</u>

Include requirements related to LCA for Designers in Market Surveys and then, if it does not limit competition, tenders

Opportunity Spend Area Lifecycle Carbon Civil Engineering Assessment Carbon Cycle in the **Built Environment** A Product Stage Raw Material Supply Transport (to Manufacturing) Manufacturing Transport (to Site) Construction Installation A ALTERNATION A B Use Stage 444 End-of-Life Stage ammenter (Deconstruction/Demolition Transport A Extraction AAA Waste Processing Disposal Recycling **Beyond System Boundary** Reuse, Recovery, and **Recycling Potential** Extraction from Nature Emissions to Nature B Use A Manufacturing A Construction

Description

- •During the Market Survey process, CERN should ask Designers if they have the ability to complete Lifecycle Carbon Assessments as part of the design phase
- •If this requirement does not significantly limit the competitiveness of bids, then it should be used as a requirement.

Potential

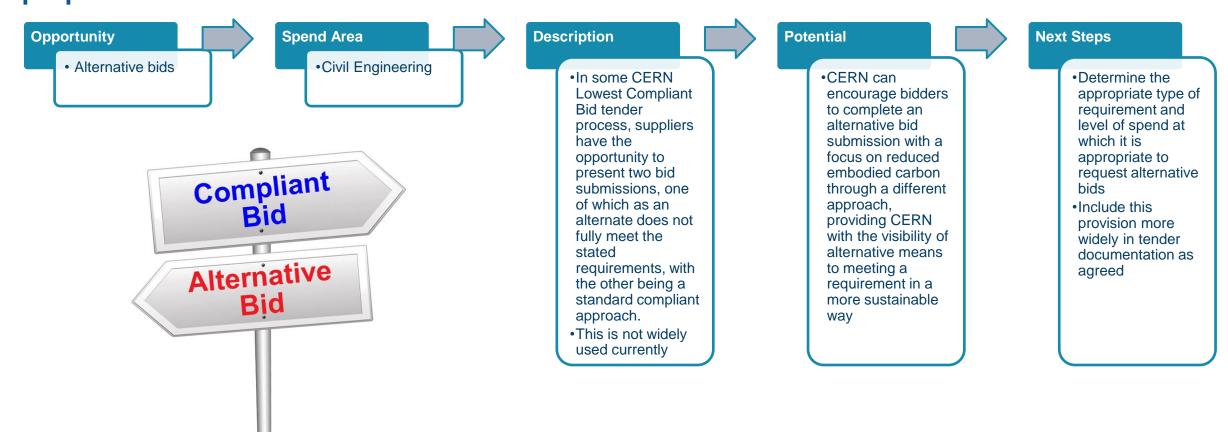
 CERN can require that designers complete a Lifecycle Carbon Analysis to measure the embodied and operational carbon emissions for construction projects across their lifetime. This will enable the organisation to precisely compare the GHG impact of different designs and evaluate this against cost.

Next Steps

- Begin including questions relating to LCA in Market Surveys relating to designers
- •Determine whether there is sufficient capability in the market to include this item as a requirement going forward

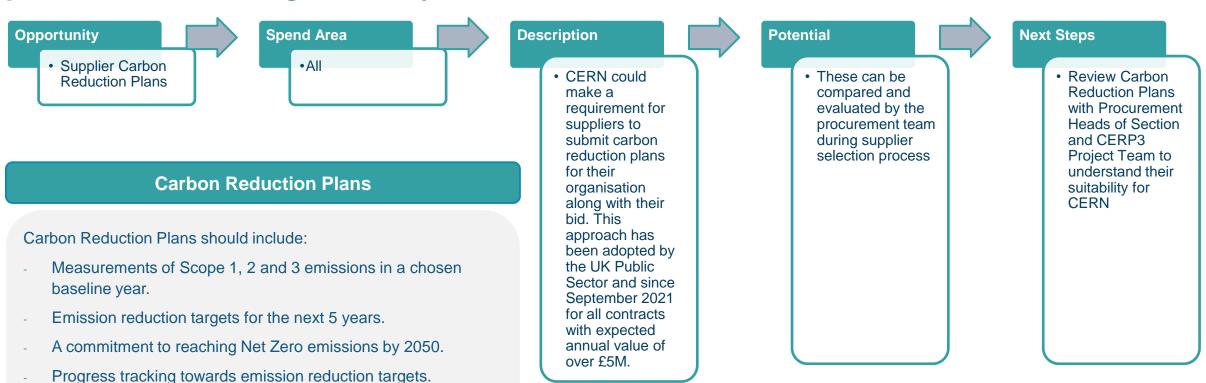
Source: LCA Practice Guide

Widen the use of 'alternate bids', with a focus on encouraging alternative sustainable proposals



Details of carbon reduction initiatives and their impact.

For large contracts, require suppliers to submit carbon reduction plans and evaluate these as part of the bids if using BVFM adjudication



For Environmentally Responsible Procurement actions that rely on supplier collaboration CERN should prioritize working with engaged suppliers

from each Procurement Code place **CERN?** Source. betterprocurement@hpw.qld.gov.au CERN as a client to the supplier? Supplier seeking to grow their business with Development Core • Open to change and to sustainability requests. CERN are more receptive to sustainability Very attractive, but Very important client, requests. • Focus on driving sustainability objectives currently not a large and very attractive and influencing the supply market. client Opportunity for supplier in the development in terms of sustainability and innovation. **Exploitable** Nuisance How attractive is Focus on improving CERN relationship with the Low potential to drive sustainability issues. Not attractive or Important client, but important client not very attractive supplier. If possible consider changing the supply base. Potential in pushing sustainability agenda through building attractiveness as a client. How important is CERN activities to the supplier?

Where would suppliers