

Low Carbon Materials - Task Group

The aim of the task group is to create a guide and webinar, to help FPS members improve this area of sustainability. We recommend the guide and webinar follow a what, why, how, measure approach to improving each area of sustainability. This means answering the following questions:

The aim of this working group is to improve knowledge and encourage further uptake in regard to the knowledge and understanding of reduced carbon concrete mixes (e.g use of replacement materials) and ultra-low carbon concretes such as AACM's (Alkali Activated Concretes).

Alternative material use for reinforcement and aggregates for example.

1 What?

What are the drivers behind the use of low carbon concretes? Provide context and explore Client agenda.

What is the estimated concrete volume used by the FPS members over the course of an entire year?

What is this approximately equivalent to in terms of CO₂e. Reference other Task Group for carbon emissions.

Consider - Is the solution to avoid the use of piled foundations or do they actually provide the best bang for buck?

2 Why?

Steel & Concrete, at least in the short term will remain an inherent material within piled foundations, we must therefore get the most load per ton of carbon out of the foundations.

We use large volumes of reinforcement, what alternatives are out there such as GFRP, fibre reinforced concrete for example. Do these have any other environmental factors?

3 How?

Explore what the current best practice is within the industry to enable the reduction in embodied Carbon in piled foundations. What other products are available that reduce embodied carbon in piles, e.g. Hollow Piles, recycled aggregate,

Is there anything that is coming over the horizon? Research

As well as reducing the embodied carbon within the materials that we use, how can we also reduce the volume of material in the first place? How do we challenge the factors of safety in design in order to reduce the embodied carbon without bringing unnecessary risk? Perhaps consider the engagement of the technical committee. NB This may constitute an additional Task group.

Bring together knowledge and real life use cases

Share lessons learned to improve knowledge and potential uptake

3.1 Short-term best practices

- *'Quick wins' or efficiency savings with short payback periods*

3.2 Medium-term best practices

- *Improvements with longer payback periods or processes*

3.3 Long-term best practices

- *Improvements with no payback period, or require significant investment / changes to current practices*
- *All long-term best practices should be necessary to reach a fully circular (or spiral) economy*

4 Measure

Provide data on the potential savings in embodied carbon through the adoption of various alternatives. Any caveats?

Any other ideas welcome

5 Key outputs

- What are the recommendations for use of low carbon materials?
 - Are there any draw backs in terms of knowledge & availability?
 - What testing could the FPS contribute to in terms of funding in order to improve usage for piled foundations?
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- An FPS or FPS-EFFC webinar, introducing the alternative low carbon materials, starting with low carbon concretes and potential moving on to challenging design factors of safety and alternative reinforcement materials