

The background is a vibrant yellow. It is decorated with several abstract geometric shapes in shades of blue, teal, and white. These include circles, semi-circles, and rounded rectangular shapes, some of which are partially cut off by the edges of the page. The shapes are arranged in a way that creates a sense of movement and depth.

## Appendix A8.1

### Embodied Carbon

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## Appendix A8.1: Construction Phase Embodied Carbon

### 1.1 Construction Phase Embodied Carbon

This appendix provides the key parameters and greenhouse gas (GHG) outputs associated with embodied carbon emissions during the Construction Phase of the Proposed Scheme, as shown in Table 1. The most significant contributor to the embodied carbon emissions is steel which accounts for 34% of total embodied carbon emissions followed by Ground Granulated Blastfurnace Slag (GGBS) at 31% as listed in Table 1.

**Table 1: Embodied Carbon Emissions During Construction of the Proposed Scheme**

Embodied Carbon Material	Tonnes CO <sub>2eq</sub> / Total	% Contribution
Asphalt	1,096	10%
Aggregates	211	2%
Precast concrete	1,983	18%
GGBS - RC 25/30 (25/30 MPa) - 50%	3,561	31%
Plastic cable ducting	48	0%
Steel columns	3,873	34%
Other	181	2%
Transport of Materials	354	3%
Total	11,307	100%

### 1.2 Maintenance Phase Embodied Carbon

The key parameters and associated GHG outputs associated with embodied carbon emissions during the maintenance phase are shown in Table 2. The most significant contributor to the embodied carbon emissions is steel which accounts for 75% of total embodied carbon emissions followed by asphalt at 24%.

**Table 2: Embodied Carbon Emissions During Maintenance of the Proposed Scheme**

Embodied Carbon Material	Tonnes CO <sub>2eq</sub> / Total	% Contribution
Asphalt	45.4	24%
Road markings	2.5	1%
Steel Columns	140	75%
Other	0.1	0.1%
Total	188	100%