



**Appendix A8.1**  
Embodied Carbon

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## Appendix A8.1: 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 as shown in Table 1. The most significant contributor to the embodied carbon emissions is Ground Granulated Blastfurnace Slag (GGBS) which accounts for 62% of total embodied carbon emissions followed by asphalt at 17% as listed in Table 2.

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

Embodied Carbon Material	Tonnes CO <sub>2eq</sub> / Total	% Contribution
Asphalt	841	17%
Aggregates	181	4%
Precast concrete	314	6%
GGBS	3011	62%
Steel columns	360	7%
Other	1	0%
Transport of Materials	136	3%
Total	4,845	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 asphalt which accounts for 67% of total embodied carbon emissions followed by steel at 18%.

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

Embodied Carbon Material	Tonnes CO <sub>2eq</sub> / Total	% Contribution
Asphalt	522	67%
Steel Columns	137	18%
Other	123	16%
Total	782	100%