**Appendix**

1. Carbon emission material factors (ICE 2011 database)

Table A1. Material factors EF(kg/kg)

| **Materials** | **Emission factor EF(kg/kg)** |
| --- | --- |
| Average CEM I portland cement | 5.50 |
| Common Brick | 3.00 |
| Concrete | 0.75 |
| FibreGlass (Glasswool) | 28.00 |
| Primary Glass | 15.00 |
| Plasterboard | 6.75 |
| Rammed Soil | 0.45 |
| Rockwool | 16.80 |
| Sand | 0.081 |
| Stone | 1.26 |
| Timber | 10.00 |
| UK (EU) Average Recycled Steel | 20.10 |
| 1.2mx1.2m Single Glazed Timber Framed Windows | 286 |
| 1.2mx1.2m Double Glazed (Air or Argon Filled) Windows | 360 |

2. Carbon emission of construction activities (BIS, 2010)

Table A2. CO₂ emissions amount produced by construction industry (BIS, 2010)

| **Sub-sector** | **MtCO₂** |
| --- | --- |
| Manufacture | 45.2 |
| Operations onsite | 2.6 |
| Refurb/Demolition | 1.3 |

Table A3. Amount of CO₂ emissions within manufacture sector (BIS, 2010)

| **Sub-sector** | **MtCO₂** |
| --- | --- |
| Wood and wood products | 1.9 |
| Plastic products | 3 |
| Glass and glass products | 1.4 |
| Structural clay products, Cement, lime and plaster | 1.2 |
| Articles of concrete, stone | 1.2 |
| Metal products | 2.2 |

Table A4. Amount of CO₂ emissions within onsite operations sector (BIS, 2010)

| **Sub-sector** | **MtCO₂** |
| --- | --- |
| Site activities | 2.0 |
| Off site assembly | 0.3 |
| Off site offices | 0.3 |

Table A5. Amount of CO₂ emissions within refub/demolition sector

| **Sub-sector** | **MtCO₂** |
| --- | --- |
| Refurbishment and maintenance | 0.7 |
| Waste site removals | 0.6 |