

**Appendix 3 – Carbon Footprint Calculations**

Category	Construction Material	Unit Conversion or Density	tCO <sub>2</sub> e/t or unit	Low Wood scheme						Holbeck Ghyll scheme					
				Tonnage	Distance between Source of Supply and site (km)	Mode of transport	Footprint (tonnes CO <sub>2</sub> e)			Tonnage	Distance between Source of Supply and site (km)	Mode of transport	Footprint (tonnes CO <sub>2</sub> e)		
							Embodied	Transport	Sum				Embodied	Transport*	Sum
<b>Metals</b>	Copper: EU Tube & Sheet	8.9 tonnes/m <sup>3</sup>	2.71	0.09	200	Road	0.24	0.002	0.25	--	--	--	--	--	0
	Copper: Reused copper	8.9 tonnes/m <sup>3</sup>	0.27	--	--	--	--	--	--	1.5	--	--	0.41	--	0.41
	Iron	7.87 tonnes/m <sup>3</sup>	2.03	1.0	200	Road	2.03	0.025	2.06	--	--	--	--	--	0
	Steel: General - UK (EU) Average Recycled Content	7.8 tonnes/m <sup>3</sup>	1.46	1.0	50	Road	1.46	0.006	1.47	0.5	50	Road	0.73	0.01	0.736
	Steel: Plate - UK (EU) Average Recycled Content	7.8 tonnes/m <sup>3</sup>	1.66	1.5	10	Road	2.49	0.002	2.49	--	--	--	--	--	0
	Steel: Stainless	8 tonnes/m <sup>3</sup>	6.52	2.0	10	Road	13.04	0.002	13.04	--	--	--	--	--	0
	Steel: Reused steel	7.8 tonnes/m <sup>3</sup>	0.15	1.5	55	Road	0.22	0.100	0.32	--	--	--	--	--	0
	Flap valves: DN 500	0.06 tonnes/1	0.06	2	100	Road	0.12	0.001	0.12	--	--	--	--	--	0
<b>SUM</b>				<b>9.09</b>	--	--	<b>19.60</b>	<b>0.14</b>	<b>19.74</b>	<b>2.00</b>			<b>1.14</b>	<b>0.01</b>	<b>1.15</b>
<b>Plastics</b>	HDPE Pipe	1.05 tonnes/m <sup>3</sup>	2.52	12.300	240	Road	31.00	0.364	31.36	0.46	240	Road	1.156	0.36	1.52
	PVC: general	1.38 tonnes/m <sup>3</sup>	3.10	0.01	20	Road	0.03	0.000	0.03	--	--	--	--	--	0
	PVC pipe	1.41 tonnes/m <sup>3</sup>	3.23	0.01	20	Road	0.03	0.000	0.03	--	--	--	--	--	0
<b>SUM</b>				<b>12.3</b>	--	--	<b>31.1</b>	<b>0.4</b>	<b>31.4</b>	<b>0.5</b>			<b>1.2</b>	<b>0.4</b>	<b>1.5</b>
<b>Concrete blocks</b>	Block - 8MPa Compressive Strength	1.05 tonnes/m <sup>3</sup>	0.06	10.5	20	Road	0.66	0.026	0.69	10.92	20	Road	0.66	0.03	0.69
<b>Mortars</b>	Mortar (1:3 cement: sand mix)	1.9 tonnes/m <sup>3</sup>	0.22	--	--	--	--	--	--	36.21	--	--	7.97	--	7.97
<b>Quarried materials</b>	Recycled aggregate	2.0 tonnes/m <sup>3</sup>	0.005	100	40	Road	0.50	0.493	0.99	--	--	--	--	--	0
<b>SUM</b>				<b>110.5</b>			<b>1.2</b>	<b>0.5</b>	<b>1.7</b>	<b>47.1</b>	--	--	<b>8.6</b>	<b>0.0</b>	<b>8.7</b>
<b>OVERALL SUM of CARBON FOOTPRINT</b>							<b>51.8</b>	<b>1.0</b>	<b>52.8</b>				<b>10.9</b>	<b>0.4</b>	<b>11.3</b>

\*The Holbeck Ghyll applicant has not provided transport information, therefore to allow for comparison of the Sum Footprint between the schemes the transport data for the Low Wood application has been used.