Embodied carbon dioxide of concrete mixes

CONCRETE	Concrete type	ECO2 ($kgCO_2/m^3$)			ECO2 ($kgCO_2$/tonne)		
		CEM I concrete	30% fly ash concrete	50% GGBS concrete	CEM I concrete	30% fly ash concrete	50% GGBS concrete
Blinding, mass fill, strip footings, mass foundations [1]	GEN1 70 mm	173	124	98	75	54	43
Trench foundations [1]	GEN1 120 mm	184	142	109	80	62	47
Reinforced Foundations [1]	RC30 70 mm	318	266	201	132	110	84
Ground floors [1]	RC35 70 mm	315	261	187	133	110	79
Structural: in situ floors, superstructure, walls, basements [1]	RC40 70 mm	372	317	236	153	131	97
High strength concrete [1]	RC50 70mm	436	356	275	176	145	112
		ECO2 ($kgCO_2/m^3$)			ECO2 ($kgCO_2$/tonne)		
Dense concrete aggregate block [2]	precast block	147			75		
Aerated concrete block [2]	precast block	121			240		
Generic lightweight aggregate block [3]	precast block	168			120		

References:

1. Embodied CO2 of various concrete mixes, The Concrete Centre, 2006, draft in proof

2. BRE Environmental Profiles database, Building Research Establishment (BRE), 2006

3. Communication from: the Environment Division, BREEAM Centre, Building Research Establishment (BRE), 2005

The above table has been prepared by industry to help specifiers to calculate the ECO_2 content of their particular chosen mix design. The information is updated frequently as the industry continues to improve its processes and specifiers should refer to it on the web to gain the latest information available.

It must be remembered that sustainability is about environmental, social and economic issues, not just the climate change issue of the environmental facet.

The whole life performance of a building/project should be considered rather than just the embodied impacts as the use of the project will account for 90% of the impacts compared to 10% embodied impacts.