



Supplementary Materials Measuring the Sustainability of Construction Projects throughout Their Lifecycle: A Taiwan Lesson

Wen-der Yu 1,*, Shao-tsai Cheng 2, Wei-cheng Ho 3 and Yu-hao Chang 2

- ¹ Department of Construction Engineering, Chaoyang University of Technology, Taichung 41349, Taiwan
- ² Department of Construction Management, Chung Hua University, Hsinchu 30012, Taiwan; shaotsai@chu.edu.tw (S.C.); g22331232004@yahoo.com.tw (Y.C.)
- ³ Department of Civil Engineering, Chung Hua University, Hsinchu 30012, Taiwan; jp6899@yahoo.com.tw
- * Correspondence: wenderyu@cyut.edu.tw

Received: 7 April 2018; Accepted: 8 May 2018; Published: 11 May 2018

Pillar	Category	Su-Category	Indicator	Definition	Unit	Initialization	Planning	Construction	Control	Turn Over	Operation	Maintenance	Demolition
E	E1	E1a	E1a1	Project Development Area Ratio	%	92%	100%	32%	29%	21%	16%	0%	0%
		E1b	E1b1	Ratio of Borrowed Soi	%	16%	82%	68%	8%	0%	0%	8%	0%
			E1b2	Ratio of Concrete Usage	%	18%	95%	87%	68%	8%	0%	11%	3%
		E1c	E1c1	Measure of Water Saving	Y/N	40%	90%	84%	45%	16%	58%	42%	3%
			E1c2	Measure of Water Recycle	Y/N	34%	82%	87%	53%	21%	55%	55%	3%
		E1d	E1d1	Measure of Energy Saving	Y/N	24%	76%	71%	39%	24%	55%	37%	3%
			E1d2	Usage of Green Energy	Y/N	32%	55%	34%	18%	16%	34%	16%	3%
	E2	E2a	E2a1	Measure of Air Pollution Prevention	Y/N	16%	45%	76%	32%	13%	8%	13%	13%
			E2a2	Usage of Low Air Pollution Method	Y/N	11%	66%	79%	42%	13%	0%	8%	5%
		E2b	E2b1	Measure of Water Pollution Reduction	Y/N	21%	66%	79%	45%	18%	42%	13%	8%
		E2c	E2c1	Measure of Solid Waste Reduction	Y/N	16%	42%	68%	42%	16%	32%	24%	26%
		E2d	E2d1	Measure of Noise Reduction	Y/N	11%	61%	82%	53%	13%	11%	18%	16%
		E2e	E2e1	Alternative for Toxicant	Y/N	13%	66%	58%	21%	5%	8%	11%	5%
			E2e2	Usage of Green Labeled Product	Y/N	21%	87%	79%	50%	24%	37%	21%	3%
		E2f	E2f1	Low GHG Emission Method	Y/N	13%	71%	76%	37%	5%	18%	3%	3%
	E3	E3a	E3a1	Ratio of Planting Area	%	29%	95%	92%	45%	26%	32%	39%	0%
			E3a2	Establishment of Habitation	Y/N	50%	76%	61%	48%	29%	32%	26%	24%
		E3b	E3b1	Avoid Bio-sensitive Area	Y/N	55%	63%	42%	34%	24%	24%	18%	18%
			E3b2	Avoid Disaster-sensitive Area	Y/N	55%	61%	42%	34%	26%	21%	18%	16%
		E3c	E3c1	Usage of Vertical Green Planting	Y/N	16%	61%	50%	13%	8%	8%	11%	0%
S	S1	S1a	S1a1	Improvement of Average Occupation Area (Y/N)	Y/N	42%	76%	21%	8%	13%	37%	13%	0%
			S1a2	Improvement of Infrastructure	Y/N	39%	76%	24%	13%	16%	29%	29%	3%
			S1a3	Ratio of Certified Green Building Items	%	61%	71%	55%	42%	45%	32%	11%	0%
		S1b	S1b1	Prevention of Disaster	Y/N	61%	71%	68%	29%	21%	24%	18%	5%
			S1b2	Protection of Stakeholders Safety	Y/N	71%	76%	76%	68%	50%	61%	34%	24%
	S2	S2a	S2a1	Measure of Conserving Cultural Monument	Y/N	42%	55%	42%	24%	13%	50%	26%	8%
	S3	S3a	S3a1	Free Access for the Disabled	Y/N	26%	84%	68%	39%	32%	58%	26%	11%
	S4	S4a	S4a1	Participation of Local Labor	Y/N	39%	66%	55%	29%	34%	53%	26%	18%
			S4a2	Fair Sharing of Benefits	Y/N	53%	55%	32%	18%	18%	21%	13%	16%
EC	EC1	EC1a	EC1a1	Ratio of Local Employment	%	16%	18%	34%	18%	0%	13%	13%	24%
			EC1a2	Self-Liquidation Ratio	%	29%	39%	11%	24%	11%	8%	8%	0%
			Overall			34%	69%	59%	34%	19%	28%	20%	8%



© 2018 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (http://creativecommons.org/licenses/by/4.0/).