ROCHESTER
BRIDGE TRUST

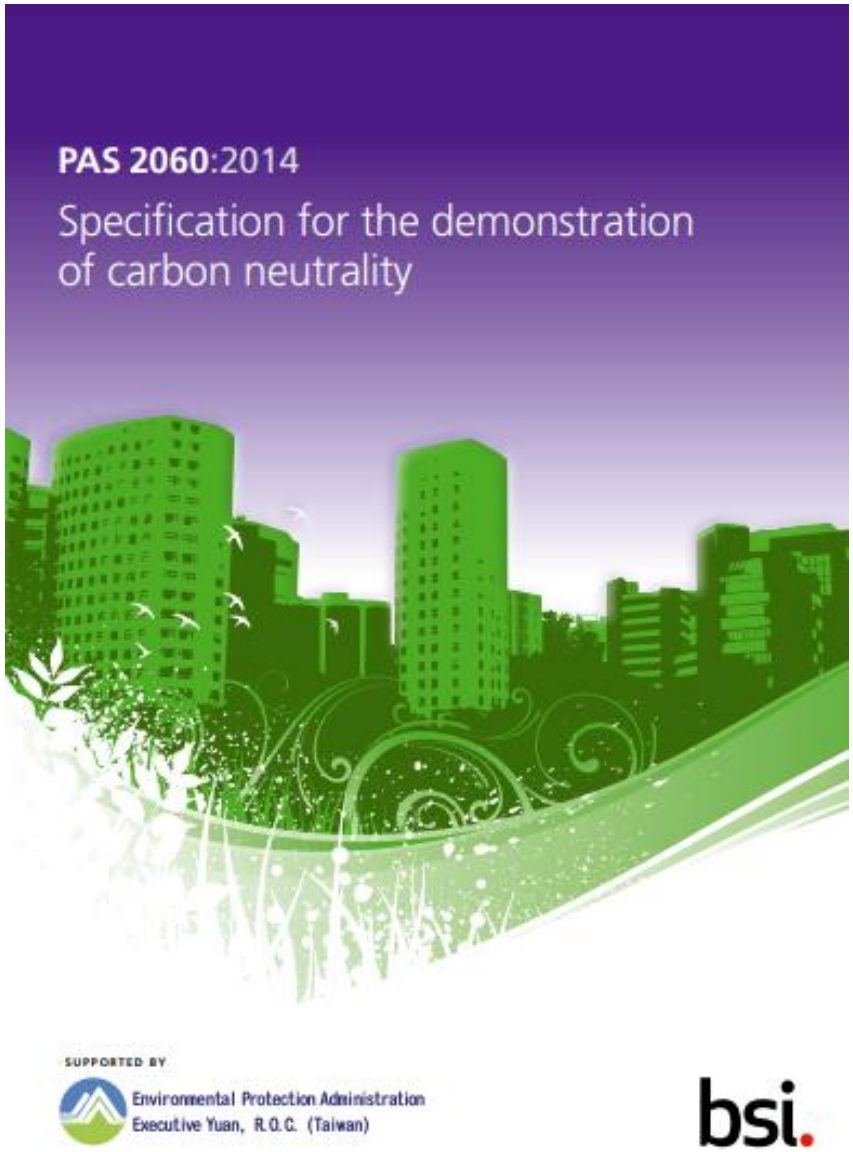
Rochester Bridge Trust – Carbon Reduction Plan

Bridge Owners' Forum – April 2021

Sue Threader BEng(Hons) HonDSc CEng FICE

Rochester Bridge Trust

The Trust is committed to taking meaningful and ambitious action immediately to drive a significant reduction in its impact on the environment for the long term. The Trust will be transparent about its progress, take responsibility for its actions and seek to demonstrate leadership in this field.

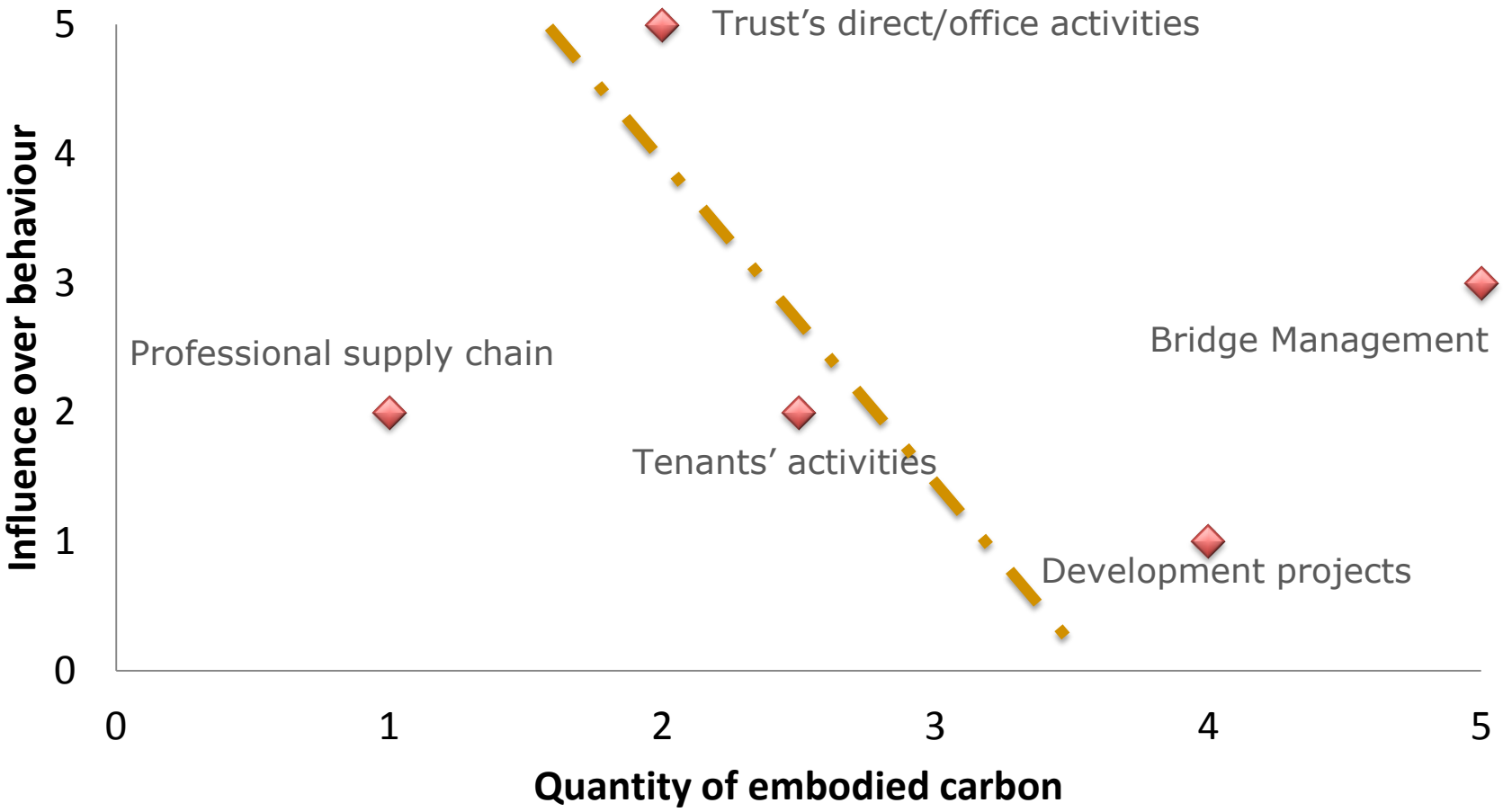

PAS 2060:2014
Specification for the demonstration of carbon neutrality
SUPPORTED BY
Environmental Protection Administration
Executive Yuan, R.O.C. (Taiwan)
bsi.

PAS 2060

Prioritisation

Activity	Embodied Carbon (1 = low; 5= high)	Ability to influence input Carbon (1=low; 5=high)	PHASE
Bridge management	5	3	1
Trust direct activities (governance, office, education, archives, exhibitions)	2	5	2
Professional advisor supply chain	2	1	3
Tenants' activities	3	2	4
Property developments	4	1	1

Prioritisation

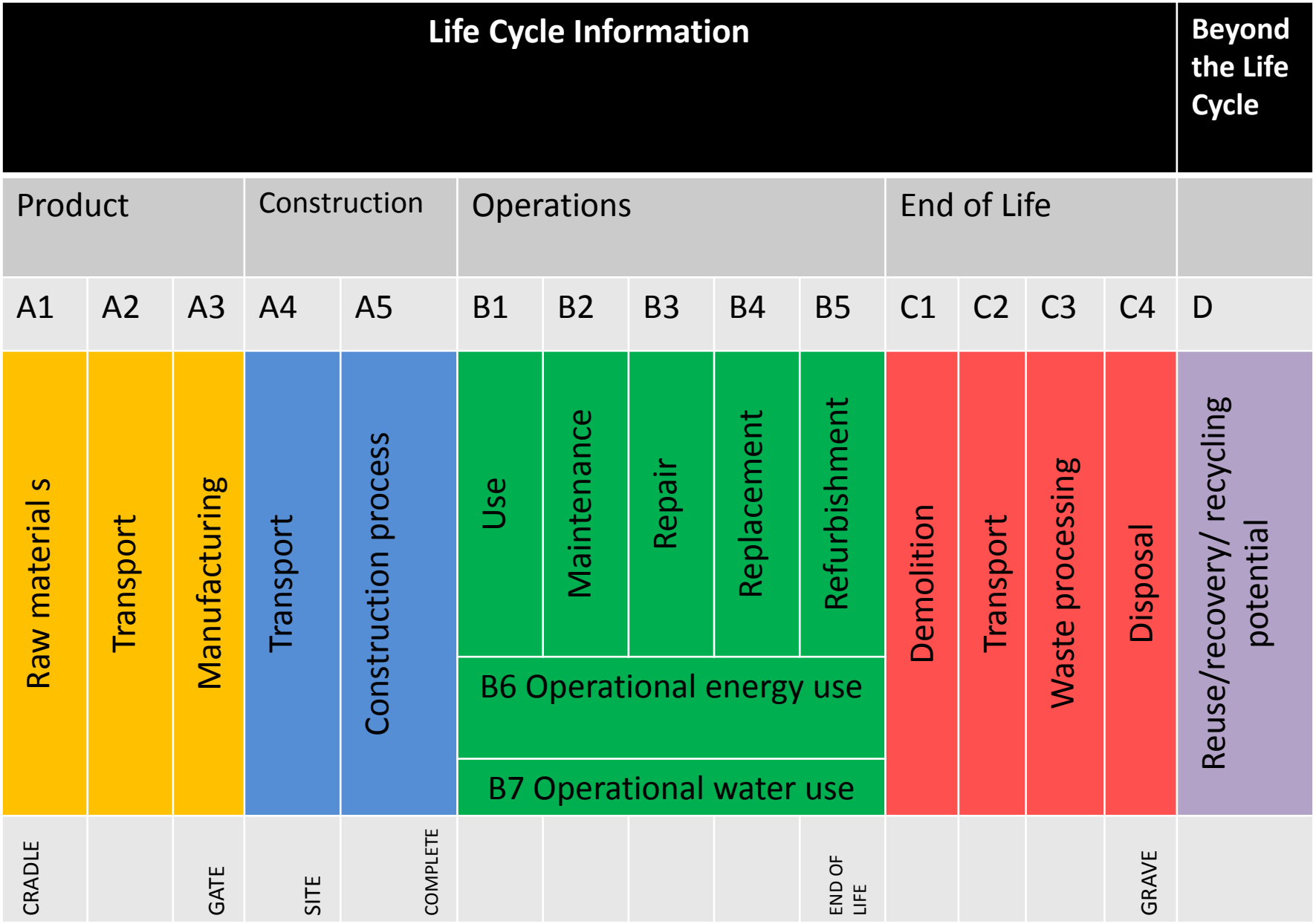


Carbon Neutrality Targets

Target Date	Activity Stream
from April 2021	Land development – offset net construction impacts within 12months of site or phase completion
March 2022	Carbon neutral bridge management & operations
December 2023	Bridge Refurbishment Project – complete offset planting
March 2023	Carbon neutral Trust operations
March 2024	Carbon neutral supply chain
March 2025	Carbon neutral tenants' activities – local offsetting

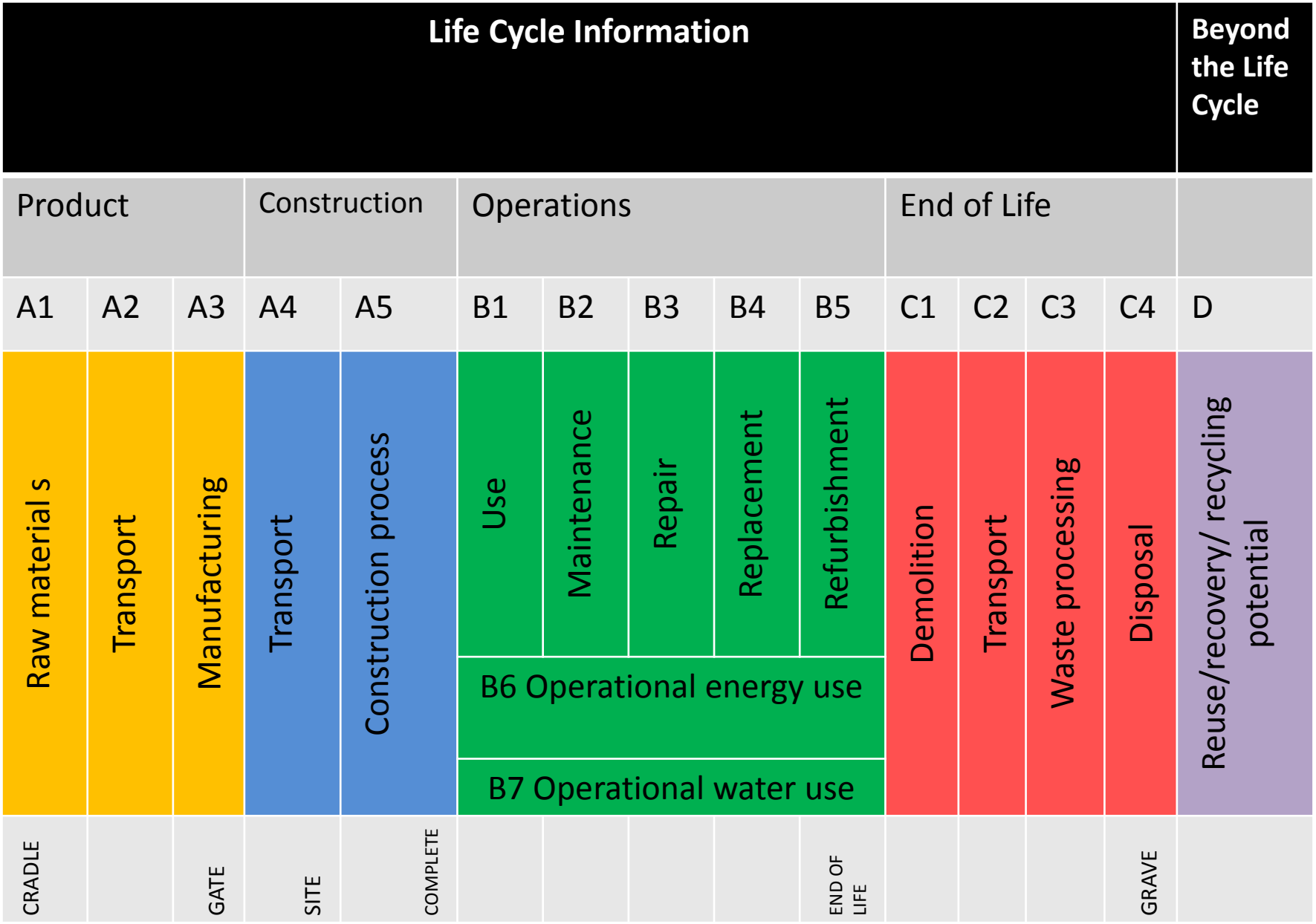
PAS 2060


Hilton Maidstone


Life Cycle Information
Beyond the Life Cycle
Product
Construction
Operations
End of Life
A1
A2
A3
A4
A5
B1
B2
B3
B4
B5
C1
C2
C3
C4
D
Raw material s
Transport
Manufacturing
Transport
Construction process
Use
Maintenance
Repair
Replacement
Refurbishment
B6 Operational energy use
B7 Operational water use
Demolition
Transport
Waste processing
Disposal
Reuse/recovery/ recycling potential
CRADLE
GATE
SITE
COMPLETE
END OF LIFE
GRAVE

Sample Carbon Factors

Description	Unit	Value
Aluminium	tCO2e/t	12.790
Asphalt, 5% (bitumen) Binder content	tCO2e/t	0.071
Bedding Mortar	tCO2e/t	0.076
Concrete C40/50 (CEM I - Cement Replacement - 0%)	tCO2e/t	0.188
Concrete Foam	tCO2e/t	0.107
Concrete ST1 (CEM I - Cement Replacement - 0%)	tCO2e/t	0.076
Concrete ST3 (CEM I - Cement Replacement - 0%)	tCO2e/t	0.114
Ductile Iron	tCO2e/t	2.030
Granite	tCO2e/t	0.700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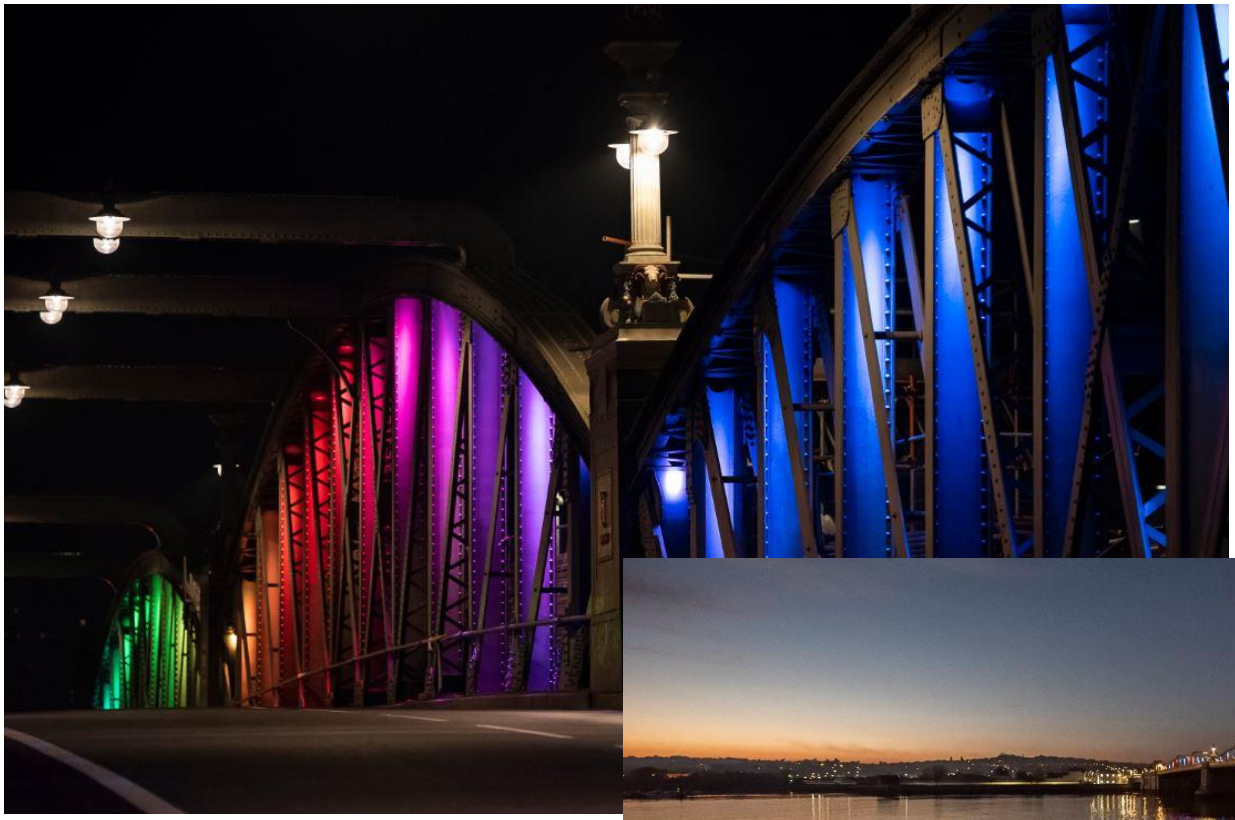
Bridge Refurbishment Project
Embodied Carbon (preliminary results)

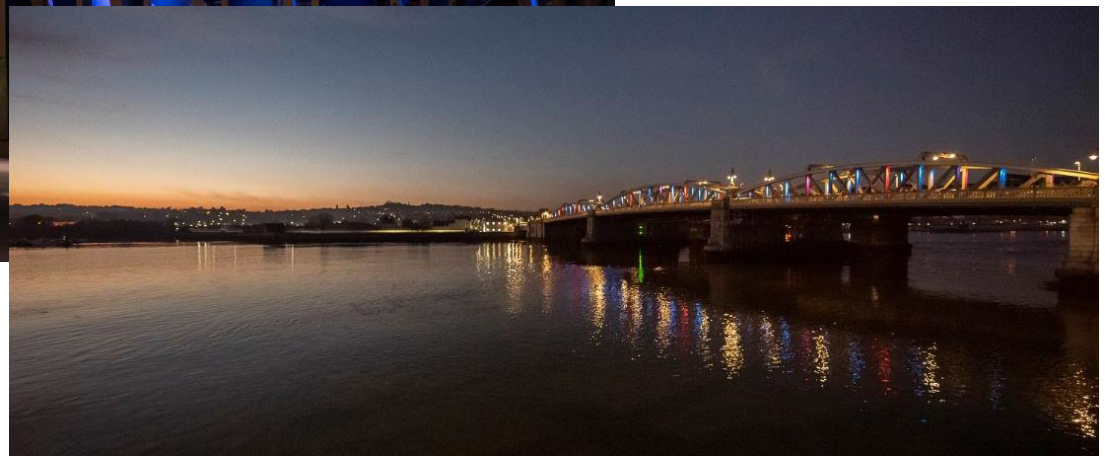
	Project Embodied Carbon (tCO_2e)	No. of trees to offset impacts	Size of plantation required (ha)
Materials & Construction	882	5,603	
Workforce travel to site	197	1,251	
Waste disposal	15	98	
Traffic diversions	106	685	
TOTAL	**1,200**	**7,640**	**3.11**

Bridge Management - TMC

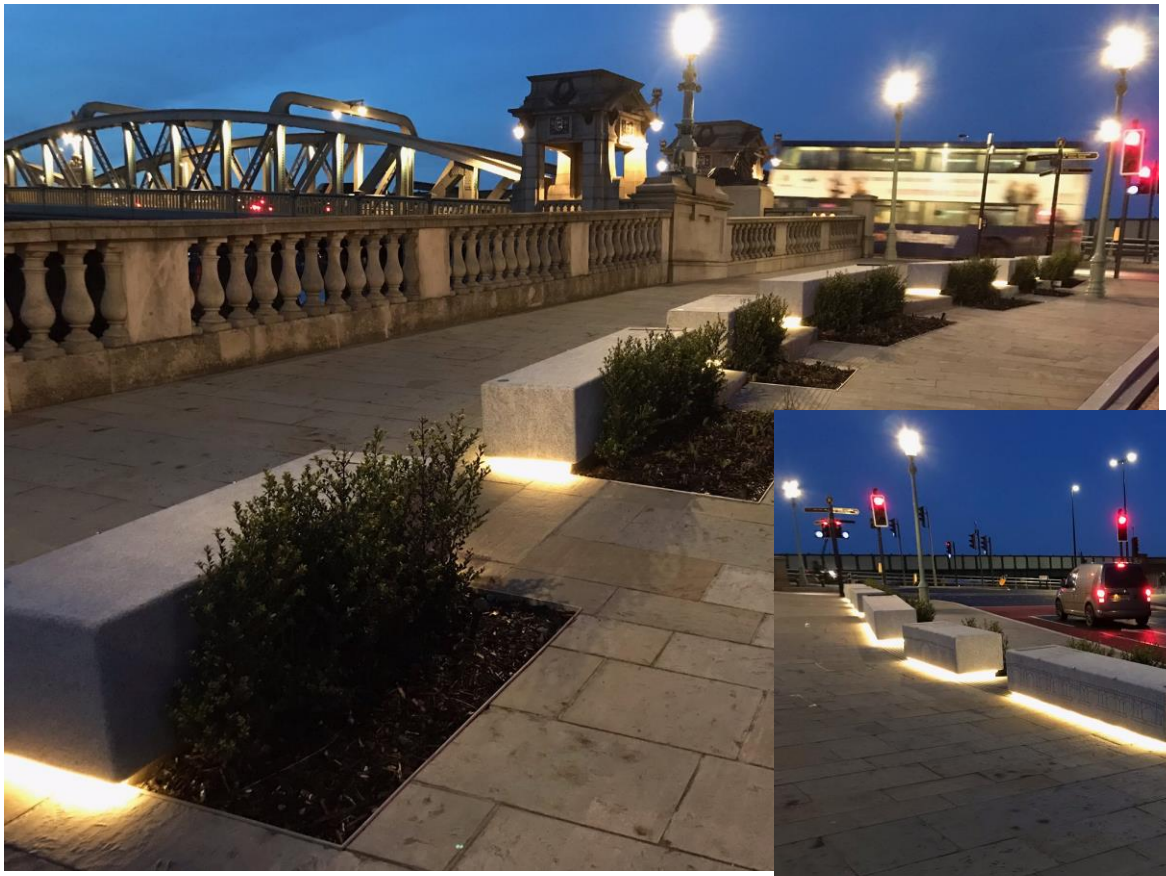
Bridge Management - TMC

Old Bridge Enhancement Lighting





Esplanade Enhancement Lighting



Lighting Policy

	2018	2021 Option 1 – enhancement 7 days pw			2021 Option 2 – enhancement 3 days pw		
	All	Core	Enhance 7 days pw	Total	Core	Enhance 3 days pw	Total
New Bridge	3.72	1.46	0.0	1.46	1.46	0.0	1.46
Old Bridge	**4.06**	**1.12**	**2.45**	3.57	1.12	**1.05**	2.17
Esplanade	0.62	0.29	0.20	0.49	0.29	0.20	0.49
Total	**8.40**	*2.87*	*2.65*	**5.52**	*2.87*	*1.25*	**4.12**
Trees p.a.	**53**	*18*	*17*	**35**	*18*	*8*	**26**


BUCHER


Single Engine, Single Emission, NO Compromise
ULEZ
Optimised

Rochester Bridge Trust

Carbon Reduction Plan