

ARUP	Job No.		Sheet No.		Rev.
	264326				
	Member/Location				
Job Title	Barmouth North Promenade OBC				
Calculation	Preferred Option Construction Costs				
	Orig. Ref.				
Made by	ASC	Date	07/05/2021	Chd.	PA

Item		Unit	Unit Rate (per week)	Total
Client PM	Year 0 - Detailed Design 1 year (1 day per week)	E/wk.	1,975	20,543
	Year 1 - Construction procurement Jan 2022 - April 2022 (16 weeks)	E/wk.		31,605
	Year 1 - Construction May 2022 to December 2022 (32 weeks)	E/wk.		63,210
				115,359

BARMOUTH PREFERRED OPTION									
Do-Something: Business As Usual (++)									
	Cross-Section (m2) or (m3) as appropriate	Length (m)	Quantity		Rate (£)	Rate (£) (2021)	Cost	Comments	
Rebuild secondary flood wall (5.15mOD to 6.25mOD)									
Concrete walls and stem/mass foundations	2.715	1150	3122	m3	200	£200	£625,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Formwork walls	1.1	1150	1265	m2	50	£50	£64,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Rebar 75kg/m3 walls	234.16875	1	234	t	1500	£1,500	£352,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Type 1 (400mm)	0.8	1150	920	m3	40.5	£41	£38,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Excavation / earthworks	2	1150	2300	m4	20	£20	£46,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Tarmac Reinstatement (200mm)	2	1150	2300	m2	50	£50	£115,000	Costs provided by ECI to inform Barmouth OBC (2021)	
2A: Rebuild tertiary flood wall (5.6mOD to 6.8mOD)									
Concrete walls and stem foundations	1.15	1150	1323	m3	200	£200	£265,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Formwork walls	1.2	1150	1380	m2	50	£50	£69,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Rebar 120kg/m3 walls	158.7	1	159	t	1500	£1,500	£239,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Masonry cladding	0.36	1150	414	m2	200	£200	£83,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Excavation / earthworks	2	1150	2300	m2	20	£20	£46,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Type 1 (400mm)	0.8	1150	920	m3	40.5	£41	£38,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Tarmac Reinstatement (200mm)	2	1150	2300	m2	50	£50	£115,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Landscaping	75	20	1500	m2	560	£560	£840,000	5No dwell areas at 250m spacing, 20m long and 15m wide spaces	
New sheet piles at toe of defence									
Sheet Piles 7.0m long AZ24-700's		700	700	m	1201	£1,201	£841,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Concrete blinding	0.6	700	420	m3	200	£200	£84,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Capping beam	0.24	700	168	m3	200	£200	£34,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Excavation / Earthworks	8	515	4120	m3	20	£20	£83,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Reinstatement / refurbishment of promenade									
Estimated cost of works to remediate voiding of structure							£133,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Type 1 (400mm)	2.08	1150	2392	m3	40.5	£41	£97,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Concrete reinstatement (400mm)	2.08	1150	2392	m3	200	£200	£479,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Outfall extension									
Concrete pipe installation with protection, diam. 750	1	10	10	m	1500	£1,500	£15,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Flap valve			1	No	1200	£1,200	£2,000	Supplier for 750mm diam	
Beach recharge									
Supply, transport and placement of material (shingle) by road for distance up to 20 miles.	133	560	74480	m3	£ 62	£62	£4,618,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Rock Armour toe									
Rock toe - Supply, transport and placement of 3 - 6t rock by barge for distance up to 20 miles. Floating plant or jack-up barge for rock placement.	14.7	400	9996	t	£ 65	£65	£650,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Rock toe underlayer - Supply, transport and placement of 100-300kg size rock by barge for distance up to 20 miles. HGV and diggers for rock placement.	4.2	400	2856	t	£ 45	£45	£129,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Flood Gates									
Flood gates (2No. 5m long)		5	2		10000	£10,000	£20,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Total direct cost							£10,111,000		
Material stock piling			52	wks.	5000	£5,000	£260,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Preliminaries			36	wks.	25000	£25,000	£900,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Subtotal							£11,271,000		
Overheads + profit			10%				£1,128,000	Costs provided by ECI to inform Barmouth OBC (2021)	
Quantified Risk Assessment 95%ile							£5,285,000	See Appendix H - Quantified Risk Assessment	
Grand Total							£17,682,000		