

Appendix 2: Building Engineering Elements and Sub-Elements



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
01 Structure	01.01 Substructure	free text	free text	m ²	% of GIFA based on ground floor footprint
		Beams / Columns	Timber		
		free text	Steel		
01 Structure	01.02 Frames		Concrete	m ²	based on GIFA
			Cast iron		
			free text		
		Solid	Timber		based on GIFA
01 Structure	01.03 Floors & Stairs	Suspended	Steel	m²	
		free text	Concrete		
			free text		
		Double pitch	Timber		based on plan area of roof – should be
01 Structure	01.04 Roofs	Mono pitch	Steel	m²	amended to reflect true roof areas of pitched roofs
		Multi pitch	Concrete		



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
		Hip End	free text		
		Flat			
		free text		-	
01 Structure	01.99 Other	free text	free text		
		Solid construction	Stone		
	02.01 External Walls & Finishes	Cavity construction	Facing brick	m²	based on approx. measurement of each / all materials
		Wall cladding	Common brick		
02 External Fabric		free text	Profiled metal		
OZ EXTERNAT I GOTIC			Render		
			Precast concrete		
			Timber		
			free text		
		Single glazed	Timber		based on count of each / all windows
02 External Fabric	02.02 Windows & Ironmongery	Double glazed	Steel	No	
		Sash & case	Aluminium		



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
		Casement	PVCu		
		Curtain walling	free text		
		free text			
		Timber	Flush		
	_	Steel	Semi glazed		based on count of each / all doors
02 External Fabric	02.03 External Doors & Ironmongery	Aluminium	Fully glazed	No	
		PVCu	free text		
		free text			
		Box eaves detail	Timber		based on approx. measurement of each / all materials
02 External Fabric	02.04 External Cladding / Eaves Detail	Soffit	PVCu	m	
		free text	free text		
02 External Fabric	02.05 External	free text	Paint	m²	based on approx. measurement of each / all
[Decoration		free text		materials
02 External Fabric	02.99 Other	free text	free text		



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
		Double pitch	Slates		
		Mono pitch	Concrete tiles	-	
		Multi pitch	Rosemary clay tiles	-	
03 Roof	03.01 Coverings -	Hip end	Profiled metal sheeting	m²	based on plan area of roof – should be
U3 ROOI	Pitched	free text	Copper	111-	amended to reflect true roof areas of pitched roofs
			Bituminous felt		
			Zinc		
			free text		
		Single ply	Bituminous felt		based on plan area of roof
		Built up system	Asphalt		
03 Roof	03.02 Coverings - Flat	Warm roof	Single ply	m ²	
		Cold roof	Lead		
		free text	free text		
03 Roof	03.03 Roof Lights	Skylight	Cast iron skylight	m ² / No	based on approx. measurement of each / all
03 11001	US.US ROOT LIGHTS	Roof window	Velux type	m² / NO	materials



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
		Cupola	In plane rooflight		
		Lantern light	free text		
		free text			
		Downpipe	Cast Iron		
		Parapet / valley gutter	Other metal		based on approx. measurement of each / all materials
03 Roof	03.04 Rainwater Goods	Eaves gutter - standard type	PVCu	m	
33 1031		Eaves gutter - ogee type	Lead		
		Flat roof outlet	free text		
		free text			
		Chimney Stacks	Brick		
		Parapet walls	Render / roughcast		
03 Roof	03.05 Chimney Stacks & Parapet Walls	Handrails	Stone	m²	based on approx. measurement of each / all materials
		free text	Galvanised metal	-	
			free text	1	



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
03 Roof	03.99 Other	free text	free text		
		Solid	Plasterboard		
		Hollow	Plaster & lath	-	
		Demountable	Plaster on hard		
04 Internal Fabric	04.01 Internal Walls &	Various	Brick	m ²	based on GIFA
04 internal rabile	Finishes	free text	Brick / block	-	
			Concrete		
			Timber		
			free text	-	
		Sheet finish	Carpet		
		Tile finish	Vinyl	-	
04 Internal Fabric	04.02 Floor Coverings	free text	Ceramic tile	- m²	based on GIFA
o - memar abile	O T. OZ TIOOT COVETINGS		Quarry tile	-	Daseu on GIFA
			Laminate sheeting	-	
			Timber		



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
			free text		
		Solid	Plasterboard		
		Strap & lined	Plaster & lath		
04 Internal Fabric	04.03 Ceilings Finishes	free text	Plaster on hard	m²	based on GIFA
			Timber		
			free text		
	04.04 Ceilings - Suspended	free text	Mineral	m ²	based on GIFA
04 Internal Fabric			Metal		
04 internal rubite			Fibreboard		
			free text		
		Solid core	Timber		
04 Internal Fabric	04.05 Internal Doors &	Hollow core	Metal	m ²	based on count of all internal doors
o i internati abile	Ironmongery	Glazed	PVCu		Sasea S South of all internal access
		free text	free text		
04 Internal Fabric		free text	Paint	m ²	based on GIFA



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
			Wallpaper		
	04.06 Internal Decoration		Ceramic tile		
			free text		
04 Internal Fabric	04.99 Other	free text	free text		
		wc	Vitreous china		
	05.01 Sanitary Ware / Fittings	WHB	Plastic		based on count of all sanitary ware / fitting types
05 Internal Fittings		Shower tray	Metal	m²	
& Fixtures		Bath	free text		
		Kitchen sink			
		free text			
05 Internal Fittings		Kitchen units / worktop	free text		based on approx. measurement of each / all materials
& Fixtures	05.02 Unit Furniture	Reception desk		No	
		free text			
05 Internal Fittings & Fixtures	05.03 Internal Fittings & Furniture	free text	free text	No	based on approx. measurement of each / all materials



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
05 Internal Fittings & Fixtures	05.99 Other	free text	free text		
		Soft landscaping	Grassed area		
06 External Grounds & Gardens	06.01 Landscaping	free text	Plant beds	Sum	cost for isolated remedial works only
			free text		
		Freestanding walls	Stone		based on approx. measurement of each / all materials
		Retaining walls	Brick	m²	
		Post & wire	Timber		
		Post & rail	Concrete		
06 External	06.02 Walls, Fencing &	Palisade	Metal		
Grounds & Gardens	Gates	Chain link	free text	. '''	
		Railings			
		Gates			
		Car park barrier			
		free text		-	



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
		Roads	Bitmac		
		Car park	Asphalt		
06 External	06.03 Roads & Car Parks	free text	Hardcore	m^2	based on approx. measurement of each / all
Grounds & Gardens	oo.oo noddo d car rang		Gravel		materials
			Block paviors		
			free text		
		Paths	Concrete slabs		based on approx. measurement of each / all materials
		Paved area	Stone flags		
		Decking	Bitmac		
		free text	Asphalt		
06 External Grounds & Gardens	06.04 Paths & Paved Areas		Gravel	m²	
			Timber		
			Block paviors		
			free text		



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
		Signage	Brick		
		Lamp posts	Timber		
06 External Grounds & Gardens	06.05 External Fittings & Furniture	Litter bins	Concrete	No	based on approx. measurement of each / all materials
		Benches	Metal		
		free text	free text		
	06.06 Ancillary Buildings	Shed	Timber		based on approx. measurement of each / all materials
		Gas meter housing	Brick	Sum	
06 External		Garage	Render		
Grounds & Gardens		free text	Metal		
			Pre cast concrete panels		
			free text		
06 External Grounds & Gardens	06.99 Other	free text	free text		
07 Drainage &	07.01 Drainage /	Gullies	Cast iron	m²	based on approx. measurement of external
External Services	Sewerage	Drainage channel	PVCu		hardstanding



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
		Manhole cover	Copper		
		Soil / waste pipes	free text		
		free text			
07 Drainage & External Services	07.02 External Utilities Infrastructure	free text	free text	m²	based on GIFA
		Lighting columns	Metal halide		
	07.03 Site Lighting	Floodlights	SON / SOX	m²	based on approx. measurement of external hardstanding / site
07 Drainage & External Services		Bulkhead fittings	Compact fluorescent		
		free text	LED		
			free text		
		free text	Copper		
07 Drainage & External Services	07.04 Lightning Protection		Aluminium	m ²	based on GIFA
			free text		
07 Drainage &	07.05 CCTV (External)	Wall mounted	Dome	m²	based on GIFA
External Services	07.03 CCTV (EXCEITIAL)	Column mounted	PTZ	-	based on on A



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
		free text	Fixed		
			free text		
07 Drainage & External Services	07.99 Other	free text	free text		
		Diesel tank	Steel		
08 Fuel Storage &	08.01 Fuel Supply /	Gas tank	GRP	m²	based on GIFA
Distribution	Storage / Distribution	Oil tank	free text		
		free text			
08 Fuel Storage & Distribution	08.02 DHW Storage / Non-Storage	free text	free text	m²	based on GIFA
08 Fuel Storage & Distribution	08.99 Other	free text	free text		
		Iron sectional	Cast iron		
09 Boilers &		Condensing	Steel		M&E engineer to price per site
Calorifiers	09.01 Boiler Plant	Domestic (combination)	free text	Item	
		Domestic (condensing)			



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
		Biomass			
		free text			
		Chilled water pressurisation unit	free text		
09 Boilers & Calorifiers	09.02 Pressurisation Plant	Expansion vessel (unvented hot water)		m²	based on GIFA
Caloriners		Heating pressurisation unit			
		free text			
		Calorifier	Copper		based on GIFA
		Plate heat exchanger	Mild steel	m²	
09 Boilers & Calorifiers	09.03 Calorifiers / Heat Exchangers	Shell & core heat exchanger	free text		
		free text			
09 Boilers &	09.04 Flues	Conventional	Stainless steel	ltem	M&E engineer to price per site
Calorifiers		Balanced	Mild steel		



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
		Fan assisted	free text		
		Draft diverter		-	
		free text		-	
09 Boilers & Calorifiers	09.05 Controls / Meters	free text	free text	m²	based on GIFA
	09.06 Insulation	Pipework (moulded)	Foil faced		
		pipework (blanket)	Hammerclad	m²	based on GIFA
09 Boilers & Calorifiers		Vessel (moulded)	Armaflex		
		Vessel (blanket)	free text		
		free text			
09 Boilers & Calorifiers	09.99 Other	free text	free text	m²	based on GIFA
10 Steam Systems	10.01 Distribution	free text	Steel	m ²	based on GIFA
20 000000000000000000000000000000000000	Pipework		free text	···	3333 3 3,
10 Steam Systems	10.02 Valves	free text	free text	m ²	based on GIFA
10 Steam Systems	10.03 Controls	free text	free text	m ²	based on GIFA



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
10 Steam Systems	10.04 Meters	free text	free text	m ²	based on GIFA
10 Steam Systems	10.05 Condense Systems	free text	free text	m²	based on GIFA
		free text	Foil faced		
10 Steam Systems	10.06 Insulation		Hammerclad	m ²	based on GIFA
			free text		
10 Steam Systems	10.99 Other	free text	free text		
	11.01 Distribution Pipework	Exposed pipework	Steel		based on GIFA
		Concealed pipework	Steel (galvanised)		
11 Heating Systems		free text	Copper	m²	
			Plastic	=	
			free text		
		Radiator (panel)	Steel		
11 Heating Systems	11.02 Heat Emitters	Radiator (column)	Cast iron	m ²	based on GIFA
		Radiator (LST)	free text		Subcu on on A
		Radiant panel			



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
		Electric convector			
		Electric storage			
		Electric fan			
		Underfloor heating			
		Unit heater (gas)			
		Radiant panel (gas)			
		free text			
		TRV's	free text		
		Wall mounted thermostats			
		Integral controls			
free text		Electronic control		m ²	based on GIFA
		Pneumatic control			
		Trace heating			



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
		Single pump set	Primary		
11 Heating Systems	11.04 Heating Pumps	Twin pump set	Secondary	m ²	based on GIFA
11 Heating Systems	11.04 Heating Fullips	Centrifugal	Shunt		based off dif A
		free text	free text		
		Pipework (moulded)	Foil faced		
	11.05 Insulation	pipework (blanket)	Hammerclad	m ²	based on GIFA
11 Heating Systems		Vessel (moulded)	Armaflex		
		Vessel (blanket)	free text		
		free text			
11 Heating Systems	11.99 Other	free text	free text		
		Air handling unit	free text		
		Fan coil unit			
12 Ventilation Systems	12.01 Ventilation Plant	Kitchen extract canopy		m ²	based on GIFA, or individually priced for domestic type fans
		Axial		-	
		Centrifugal			



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
		Roof mounted unit			
		Domestic extract			
		free text			
		Circular	Plastic		
12 Ventilation	12.02 Distribution	Rectangular	Galvanised steel	m ²	based on GIFA
Systems	Ductwork	free text	Fire rated		
			free text		
	12.03 Automatic Fire	Motorised	free text		based on GIFA
12 Ventilation Systems	Dampers & Control Panel	Fusible link		m ²	
	runci	free text			
		Local control	free text		based on GIFA
42.1/ 1/1 1/		Electronic control			
12 Ventilation Systems	12.04 Controls	Pneumatic control		m ²	
		free text			



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
		Split DX	free text		
12 Ventilation Systems	12.05 Room Split / Chillers / Compressors	VRV / VRF		m²	based on GIFA, or individually priced
		free text			
		Absorption	free text		
		Centrifugal			based on GIFA
12 Ventilation Systems	12.06 Chillers / Cooling Systems	Reciprocating		m²	
		Screw			
		free text			
12 Ventilation Systems	12.99 Other	free text	free text		
13 Medical Gas Systems	13.01 Vacuum Insulated Evaporators	free text	free text	m²	based on GIFA
		Concealed pipework	Copper		
13 Medical Gas	13.02 Distribution	Exposed pipework	Stainless steel	m ²	based on GIFA
Systems		free text	PVC		based on on A
			free text		



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
13 Medical Gas Systems	13.03 Manifolds	Automatic Manual free text	free text	m²	based on GIFA
13 Medical Gas Systems	13.04 Gas Cylinder Storage	free text	free text	m²	based on GIFA
13 Medical Gas Systems	13.05 Outlets	free text	free text	m²	based on GIFA
13 Medical Gas Systems	13.06 Alarm Systems	Integrated system free text	free text	m²	based on GIFA
13 Medical Gas Systems	13.07 Medical Air Compressors / Vacuum Pumps	Medical air compressor Surgical air compressor Medical vacuum free text	free text	m²	based on GIFA
13 Medical Gas Systems	13.99 Other	free text	free text		



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
		Cold water storage	Galvanised steel		
14 Hot & Cold	14.01 Water Storage &	Feed / expansion tank	GRP	m ²	based on GIFA
Water Systems	Header Tanks	free text	Lead lined	. ""	based on dir A
			free text		
14 Hot & Cold Water Systems	14.02 Water Treatment Plant	free text	free text	m²	based on GIFA
	14.03 Distribution Pipework	free text	Copper	m²	based on GIFA
14 Hot & Cold Water Systems			Plastic		
			free text		
		Domestic booster	free text		based on GIFA
		Hose reel booster		-	
14 Hot & Cold	14 04 Dumps	Mains cold water booster		m²	
Water Systems	14.04 Pumps	Single pump (DWS)			
		Twin pump (DWS)			
		free text			



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
		TMV's	Copper		
14 Hot & Cold Water Systems	14.05 Valves / Controls	Shower mixer and head	Mild steel	m ²	based on GIFA
Trace: Systems		Shut off valve	free text		
		free text			
		Instantaneous (electric)	free text		
14 Hot & Cold	14.06 Water Heaters	Storage (electric)		m²	based on GIFA
Water Systems		Water boiler (electric)			
		Shower (electric)			
		free text			
		Pipework (moulded)	Foil faced		
		Pipework (blanket)	Hammerclad		based on GIFA
14 Hot & Cold Water Systems	14.07 Insulation	Vessel (moulded)	Armaflex	m ²	
		Vessel (blanket)	free text	-	
		free text			



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
14 Hot & Cold Water Systems	14.99 Other	Sprinkler installation	free text	m²	based on GIFA
water systems		free text			
		Traction	free text		
		Hydraulic			
15 Lifts & Hoists	15.01 Passenger Lifts	Screwed drive		ltem	based on number of lifts
		Stair Lift			
		free text			
		Traction	free text		based on number of lifts
15 Lifts & Hoists	15.02 Goods Lifts	Hydraulic		ltem	
		free text			
		Traction	free text		
15 Lifts & Hoists	15.03 Hoists	Hydraulic		ltem	based on number of hoists
		free text			
15 Lifts & Hoists	15.04 Control Panel	free text	free text	ltem	
15 Lifts & Hoists	15.99 Other	free text	free text		



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
16 Fixed Plant / Equipment	16.01 Sterilisers	free text	free text	m²	based on GIFA
16 Fixed Plant / Equipment	16.02 Bedpan Disposal	free text	free text	m²	based on GIFA
16 Fixed Plant / Equipment	16.03 Disinfection Equipment	free text	free text	m²	based on GIFA
16 Fixed Plant / Equipment	16.04 Catering Equipment	free text	free text	m²	based on GIFA
16 Fixed Plant / Equipment	16.05 Laundry Equipment	Washing machine Tumble drier	Electric Gas	m²	based on GIFA
		free text	free text		
16 Fixed Plant / Equipment	16.06 Miscellaneous Equipment	free text	free text		
16 Fixed Plant / Equipment	16.99 Other	free text	free text		
17 Electrical System	17.01 HV Network	HV switchgear (external)	Dry type	m²	based on GIFA
		HV switchgear (internal)	Oil filled		



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
		Transformer	free text		
		free text			
		Combined heat & power (CHP)	Gas		
		Standby generator	Diesel		based on GIFA
17 Electrical System	17.02 Generators	UPS	Steam	m²	
		free text	Lead acid (sealed)		
			Nickel-alkaline (vented)		
			free text		
	17.03 Switchgear	LV switchgear	Air circuit breakers (ACB's)	m²	based on GIFA
17 Electrical System		Main supply switchgear and distribution	Moulded case circuit breakers (MCCB's)		
		free text	Fuses		
			free text		
17 Electrical System	17.04 Distribution Boards	Consumer units	Miniature circuit breakers (MCB's)	m²	



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
		Distribution boards	Residual current devices (RCD's)		
		Feeder pillars	Fuses	J	based on GIFA
		free text	free text		
	17.05 Wiring Systems / Bonding	Surface containment	MICC	m²	based on GIFA
17 Electrical System		Surface fixed	PVC / LSF		
		Flush	free text		
		free text			
	17.06 Fittings	Sockets / switches	Plastic	m²	based on GIFA
17 Electrical System		free text	Metal clad		
			free text		
17 Electrical System	17.07 Luminaires	Surface	Fluorescent	m² b	based on GIFA
		Recessed	Compact fluorescent		



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
		Bulkhead	LED		
		free text	Halogen		
			free text		
		Integral	Fluorescent		
17 Electrical System	17.08 Emergency Luminaires	Stand alone	LED	m ²	based on GIFA
		free text	free text		
17 Electrical System	17.99 Other	free text	free text		
	18.01 Telephone Systems	Dedicated	free text	m²	based on GIFA
18 Communication Systems		Voice over IP			
		free text			
	18.02 Data Transmission	Cabling	Cat 5		
18 Communication Systems		Cabinets	Cat 5E	m²	based on GIFA
		free text	Cat 6		
			Cat 6A		
			free text		



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
18 Communication Systems	18.03 Paging Systems	free text	free text	m²	based on GIFA
		Hard wired	free text		
18 Communication Systems	18.04 Nurse Call Systems	Wireless		m²	based on GIFA
		free text			
	18.05 Radio & Television Systems	Digital	free text	m²	based on GIFA
18 Communication Systems		Analogue			
		free text			
18 Communication Systems	18.06 Bedhead Services	free text	free text	m²	based on GIFA
18 Communication Systems	18.99 Other	free text	free text		
	19.01 Fire Alarm Panels	Conventional	free text	m²	based on GIFA
19 Alarms & Detection Systems		Addressable			
		Wireless			
		free text			



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
_		Surface	Soft skin		based on GIFA
19 Alarms & Detection Systems	19.02 Fire Alarm Wiring System	Flush	MICC	m ²	
		free text	free text	-	
19 Alarms &	19.03 Security Systems	Intruder alarm	free text	m ²	based on GIFA
Detection Systems	19.05 Security Systems	free text		- '''	Daseu OII GIFA
	19.04 CCTV (Internal)	free text	Dome	m²	based on GIFA
19 Alarms &			PTZ		
Detection Systems			Fixed		
			free text		
	19.05 Panic Attack System	Hard wired	free text	m²	based on GIFA
19 Alarms & Detection Systems		Wireless			
		free text			
	19.06 Other Alarm Systems	Disabled toilet alarm	free text	m²	based on GIFA
19 Alarms & Detection Systems		Carbon monoxide			
		Leak detection			



Element	Sub Element	Design	Material	Costing Basis	Additional Comments
		Smoke aspiration system			
		free text			
19 Alarms & Detection Systems	19.99 Other	Fire suppression system	free text		
		free text			
	20.01 Building Management System	Head end (supervisor)	Delta	m²	based on GIFA
		Outstations	Honeywell		
		Plant controller	Satchwell		
20 Building Management		Operating system	Trend		
Control System		Remote display panels	free text		
		Communications network (hardwiring)			
		free text			
20 Building Management Control System	20.99 Other	free text	free text		