

Kingsway Tunnels - Totals Tunnel strip out

Item	No.	Sum	Unit	Notes / Assumptions				
General	•							
Floor space area (GIA)		6263.4	m2	Total Floor area - approximate based on Matterport surevy				
Total internal surface area of tunnel minus floor space area		17670.8	m2	2x πr2 Plus 2πr2xL				
Concrete								
Area of Dividing Blockwork walls		779.6	m2	50% of the south street west tunnel x height				
Table and the state of the stat				Approximate concrete within base of tunnel bore, not accounting for				
Total concrete floor (in situ quantities pre-processing)		2456.8	m3	drainage and or service ducting - assumed removal of 50%				
Total volume of concrete & brick work partition walls	0.15	116.9	m3	Wall thickness measured from Matteport survey 0.15				
Total concrete (in situ quantities pre processing)		2573.7	m3	Based on the above assumptions and calculations - Tonnes conversion				
Processed concrete volume (inc bulking factor)		4375.3	m3	factors based on referenced websites and standard guidance (Bulk density				
Concrete tonnes conversation		10063.2	Tonnes	of 2300kg/m3)				
Miscallaneous Office Equipment & Hard furnishings (soft strip ma	lterial)							
Desks / Chairs / Furnitures all occupied floors		9.6	Tonnes	Estimated value based on Matterport survey				
Showers and toilets		1.2	Tonnes	- Estimated value based on Matterport survey				
Floor Tiles (Assumed ceramic tile) (Patterned)								
Total floor tiles		3548.8	m2	Assumption Based on Matterport survey				
Total Volume of floor Tiles	0.05	177.4	m3	Thickness assumption based on average thickness of commercial tiles (0.05m)				
Tile tonnes	2.4	425.9	Tonnes	weight conversion based on referenced websites				
Floor Tiles (Vinyl)								
Tiled floor space per floor		1099.5	m2	Assumption Based on Matterport survey (2.6kg per m2)				
Total Volume of floor Tiles	0.003	3.3	m3	Thickness assumption based on average thickness of commercial tiles (0.003m)				
Tile tonnes	0.0026	2.9	Tonnes	weight conversion based on referenced websites (2.6kg per m2)				
Floor Tiles (Glazed Ceramic)								
Tiled floor space per floor		548.0	m2	Assumption Based on Matterport survey				
Total Volume of floor Tiles	0.05	27.4	m3	Thickness assumption based on average thickness of commercial tiles (0.05m)				
Tile tonnes	2.4	65.8	Tonnes	weight conversion based on referenced websites				
Carpets								
Total area of carpet		999.3	m2	Assumption Based on Matterport survey				
Carpet thickness	0.01	10.0	m3					
Carpet Tonnes	0.0055	5.5	Tonnes	Online sources show 550g per m2				
Ceiling Tiles (Mineral Fibre acoustic boards)								
Mineral Fibre Ceiling tiles		724.1	m2	Assumption Based on Matterport survey				
Total Volume of Ceiling Tiles	0.0015	1.1	m3	Thickness assumption based on average thickness of ceiling tiles (0.0015m)				

Tile tonnes	0.0034	2.5	Tonnes	Weight conversion based on referenced websites (1m2=3.47kg)
Ceiling Tiles (Metal Slat Roof) (Potentially Aluminum) (i	n North Street West Canteer	area)		
Metal Slat roof (western Half)		276.2	m2	Assumption that metal slat roof (western Portion)
Total ceiling tiles all occupied floors	1	276.2	m2	Assume that consistent on all occupied floors
Total Volume of Ceiling Tiles	0.0015	0.4	m3	Thickness assumption based on average thickness of ceiling tiles (0.0015m)
Tile tonnes	0.34	0.1	Tonnes	Weight conversion based on referenced websites
Water pipework (Ferrous metal)				
Water pipework		1346.1	m	Length of tunnel plus width in m. based on assumptions.
Steel Pipework	0.015	20.2	Tonnes	1m steel pipe = 0.0015 tonnes (25mm dia pipe with 2.5mm thick walls)
Electrical (Non-Ferrous Metals)			'	
LV Electrical cables		5018.8	m	Based on Matterport survey assumptions
Volume in m3 for LV Electrical cables	0.04	200.8	m3	Assumption based on referenced websites
Volume in tonnes for LV electrical cables	0.015	3.0	Tonnes	15kg per m3
Flourescent Lighting		505.0	Units	Assume that consistent throughout tunnel
Total Florescent Lighting		0.5	Tonnes	95g each flourescent tube aprox
Electrical switchgear and circuit breakers	25	7.5	Tonnes	25 switchgear cabinets - Assumption of 300kg per unit
Transformers	10	28.0	Tonnes	2 transformers, winding weight unknown from Matterport survey. assume 2,860kg from modern units
Generator equipment and AC/DC inverter	1	8.0	Tonnes	8 tonnes per unit assumption
HV electical transformers	4	11.4	Tonnes	Assumption taken from matterport survey of 2,860kg per unit
Bakerlite pannels (Identified in asbestos management s	urvey)			
Total Bakerlite panneling		11867.2	m2	Assumptions from Matterport survey Bakerlite pannel weight = 1250kg / m3
Bakerlite panneling m3	0.002	23.7	m3	Bakerlite pannel thickness 2mm
Bakerlite panneling tonnes	1.25	29.7	tonnes	
Doors	•		•	
Doors		164.0	No.	Assumptions from matterport surevy
Weight of doors tonnes	0.04	6.6	Tonnes	Weight based on referenced website average 40kg per door - 1m3 = 1000kg
Ventilation ducting (Ferrous metal)				
Ductwork for Air handling units		15.4	Tonnes	Approximately 1 length of the tunnels assumption from Matterport survey(15kg/m)
Total		15.4	Tonnes	7. 3. 7
Additional Plant (Mixed Ferrous and Non-Ferrous Meta	ls)		<u>'</u>	
Air Handling Unit	1	2.1	Tonnes	Assumption weight taken from a modern modular packaged air handling unit (NuAire - NA17-220/130 - 2.13 tonnes per unit)
2 x Large 6 cylinder Diesel generators		16.0	Tonnes	Assumption from matter port survey as a 6-cylinder Ruston 6APC engine - 8 tonnes
DC lead batteries 23 cells within 1 rack		0.72		Assumptions from Matterport survey DC battery rack weight aprox 720kg
Air Handling Unit	1	2.1	Tonnes	Assumption weight taken from a modern modular packaged air handling unit (NuAire - NA17-220/130 - 2.13 tonnes per unit)

2 x Large 6 cylinder Diesel generators		16.0	i ronnes	Assumption from Matterport survey as a 6-cylinder Ruston 6APC engine - 8 tonnes
Asbestos 3 stage Decontamination Unit		0.9	Tonnes	930 kg average unit
Water chiller unit		0.2	i ionnes	Assumption of 192kg taken from modern equivalent and observation from Matterport survey
Air Handling Unit	1	2.1	i ionnes	weight taken from a modern modular packaged air handling unit (NuAire - NA17-220/130 - 2.13 tonnes per unit)
Telecoms exchange racking		1.2	Tonnes	Assumption based on Matterport survey
Total		41.4	Tonnes	



Second Avenue

Usage: Fitted-out Offices

1st half furnishings; Bakelite panels on walls and roof, Room dividers Bakelite, Carpet throughout

Item	No.	Sum	Unit	Notes / Assumptions
General				· · · · · · · · · · · · · · · · · · ·
Floor space area (GIA)		539.0	m2	Total Floor area - approximate based on Matterport surevy
Tunnel bore height (including concrete floor)		5.7	m	Measurement from floor to roof of tunnel bore
Length of Tunnel		77.0	m	Length of tunnel
Diameter of Tunnel		7.2	m	Average width assumed constant throughout tunnel
Radius of tunnel		3.6	m	Width halved
Floor width		7.0	m	floor width within bottom 10th of tunnel bore
Total internal surface area of tunnel minus floor space area		1,284.1	m2	2x πr2 Plus 2πr2xL
Concrete				
		229.9		Approximate concrete within base of tunnel bore, not accounting for
Total volume concrete floor		229.9	m3	drainage and or service ducting - assumed removal of 50%
Total concrete (in situ quantities pre processing)		229.9	m3	Based on the above assumptions and calculations - Tonnes conversion
Processed concrete volume (inc bulking factor)		390.8	m3	factors based on referenced websites and standard guidance (Bulk density
Concrete tonnes conversation		528.7	Tonnes	of 2300kg/m3)
Miscallaneous Office Equipment & Hard furnishings (soft strip malteria	al)			
Desks / Chairs /Msc fixtures and fittings /Furnitures		2.8	Tonnes	Estimated value based on Matterport survey
Ceiling Tiles (Mineral Fibre acoustic boards)				
Mineral Fibre Ceiling tiles		539.0	m2	The assumption that the ceiling is office tiling
Total Volume of Ceiling Tiles	0.0015	0.8	m3	Thickness assumption based on average thickness of ceiling tiles (0.0015m)
Tile tonnes	0.0034	1.8	Tonnes	Weight conversion based on referenced websites (1m2=3.47kg)
Carpets				, ,
Total area of carpet		539.0	m2	Assumption that carpet covers all of the floor space within office fit out
Carpet thickness	0.01	5.4	m3	
Carpet Tonnes	0.0055	3.0	Tonnes	Online sources show 550g per m2
Water pipework	•			
Water pipework	0.015	84.2	m	Length of tunnel plus width in m. based on assumptions. 0.015m based on referenced websites.
Steel Pipework	0.96	1.3	Tonnes	1m steel pipe = 0.0015 tonnes (25mm dia pipe with 2.5mm thick walls)
Electrical				
LV Electrical cables		308.0	m	Assumed 4 lengths off tunnel for distribution
Volume in m3 for LV Electrical cables	0.04	12.3	m3	Assumption based on referenced websites
Volume in tonnes for LV electrical cables	0.015	0.2	Tonnes	
Fluorescent Lighting per floor		40.0	No.	Based on assumptions
Total volume Florescent Lighting		0.0	Tonnes	95g each flourescent tube aprox
Bakerlite pannels (Identified in asbestos management survey)				

Total Bakerlite panneling		1,541.0	ı mı	Assumptions from Matterport survey Bakerlite panel weight = 1250kg / m3 (fitted out office, 20% added for partition walls)		
Bakerlite panneling m3	0.002	3.1	m3	Bakerlite pannel thickness 2mm		
Bakerlite panneling tonnes	1.25	3.9	Tonnes			
Doors						
Doors		35.0	No.	Assumption from matterport survey		
Weight of doors tonnes	0.04	1.4	Tonnes	Weight based on referenced website average 40kg per door - 1m3 = 1000kg		
Ventilation ducting						
Ductwork for Air handling units		1.2	Tonnes	Approximately 1 lengths of the tunnel (15kg/m)		



First Avenue

Usage: Fitted-out Offices & Decom Asbestos unit

1st half furnishings; Bakelite panels on walls and roof, Room dividers Bakelite, carpet throughout

2nd half furnishings: Asbestos decom unit, Bakelite walls and ceramic tiles floor

General	Item	No.	Sum	Unit	Notes / Assumptions
Tunnel bore height (including concrete floor) Length of Tunnel Length of Lunnel Diameter of Tunnel Diameter	General				
Length of Tunnel 7.50	Floor space area (GIA)		525.0	m2	Total Floor area - approximate based on Matterport surevy
Dameter of Tunnel Radius of Tunnel Radius of Tunnel Radius of Stunnel Radius of Stun	Tunnel bore height (including concrete floor)		5.7	m	Measurement from floor to roof of tunnel bore
Radius of tunnel Radius	Length of Tunnel		75.0	m	Length of tunnel
Floor width 7.0 m floor width within bottom 10th of tunnel bore 1252.9 m2 2x n2 Plus Arizxal. Approximate concrete within base of tunnel bore, not accounting for drainage and or service ducting - assumed removal of 50% ariange and or service ducting - a	Diameter of Tunnel		7.2	m	Average width assumed constant throughout tunnel
Total internal surface area of tunnel minus floor space area Concrete 223.9	Radius of tunnel		3.6	m	Width halved
Concrete Total volume concrete floor Total volume inc bulking factor) Salo.6 Salo.6 Salo.6 Salo.6 Salo.6 Salo.6 Tonnes To	Floor width		7.0	m	floor width within bottom 10th of tunnel bore
Approximate concrete within base of tunnel bore, not accounting for Total concrete (in situ quantities pre processing) 223.9 m3 Based on the above assumptions and calculations - Tonaes conversion 50% Tonnes Tonaes of 2000kg/m3 Tonnes Tonaes of 2000kg/m3 Tonnes Tonaes of 2000kg/m3 Tonnes Tonaes Tona	Total internal surface area of tunnel minus floor space area		1252.9	m2	2x πr2 Plus 2πr2xL
Total volume concrete floor Total concrete (in situ quantities pre processing) Processed concrete (in situ quantities pre processing) Processed concrete volume (inc bulking factor) Sa8.6. m3 Sa8.6. m3 Sa8.6. m3 Sased on the above assumptions and calculations - Tonnes conversion factors based on referenced websites and standard guidance (Bulk density Concrete tonnes conversation Miscallaneous Office Equipment & Hard furnishings (soft strip malterial) Desks / Chairs / Msc fixtures and fittings / Furnitures Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors Ploor Tiles (Assumed ceramic tile) Tiled floor space per floor Total Volume of floor Tiles Desks / Chairs / Msc fixtures and fittings / Sase Desks / Chairs / Msc fixtures and fittings / Sase Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors and floors floor floors	Concrete				
Total volume concrete floor Total concrete (in situ quantities pre processing) Processed concrete volume (inc bulking factor) Processed concrete volume (inc bulking factor) State of the s			222.0		Approximate concrete within base of tunnel bore, not accounting for
Processed concrete volume (inc bulking factor) Concrete tonnes conversation Miscallaneous Office Equipment & Hard furnishings (soft strip malterial) Desks / Chairs / Msc fixtures and fittings / Furnitures Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors Tiled floor space per floor Titled floor space per floor Total Volume of floor Tiles Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors Total Volume of floor Tiles Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors Total Volume of floor Tiles Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors Total Volume of floor Tiles Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors Total Volume of floor Tiles Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors gace be floor Total Volume of floor Tiles Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors gace is ceramic tiling (14kg per m2) The assumption based on average thickness of commercial tiles (10.003m) Weight conversion based on referenced websites (2.6kg per m2) Tile donnes Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors gace Total Volume of floor Tiles Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors gace Total Volume of floor Tiles Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors gace Total Volume of Ceiling Tiles (Mineral Fibre acoustic boards) Mineral Fibre Ceiling Tiles (Mineral Fibre acoustic boards) Mineral Fibre Ceiling Tiles (Mineral Fibre acoustic boards) Tile tonnes Desks / Cairs / Msc fixtures and fittings / Furnitures all occupied floors gace Total Volume of Ceiling Tiles Desks / Cairs / Msc	Total volume concrete floor		223.9	m3	drainage and or service ducting - assumed removal of 50%
Concrete tonnes conversation Miscalianeous Office Equipment & Hard furnishings (soft strip malterial) Desks / Chairs / Msc fixtures and fittings / Furnitures Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors Floor Tiles (Assumed ceramic tile) Tiled floor space per floor Total Volume of floor Tiles 0.003 0.6 m3 The assumption that 1/3 the floor space is ceramic tiling (14kg per m2) Tiled floor space per floor Tile tonnes 0.003 0.6 m3 Vinyl flooring (Office portion) (2.6kg per m2) and floor space floor floor space per floor Total Volume of floor Tiles 0.003 0.6 m3 Vinyl flooring (Office portion) (2.6kg per m2) and floor space floor floor space per floor Total Volume of floor Tiles 0.003 0.6 m3 Vinyl flooring (Office portion) (2.6kg per m2) and floor space floor floor space per floor Total Volume of floor Tiles 0.003 0.6 m3 Vinyl flooring (Office portion) (2.6kg per m2) and of floor space floor floor space per floor space per floor fl	Total concrete (in situ quantities pre processing)		223.9	m3	Based on the above assumptions and calculations - Tonnes conversion
Desks / Chairs / Msc fixtures and fittings / Furnitures 1.4 Tonnes Estimated based on matterprort survey, Half tunnel fitted out as office Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors 0.0 Tonnes Space Tonnes Space Tonnes	Processed concrete volume (inc bulking factor)		380.6	m3	factors based on referenced websites and standard guidance (Bulk density
Desks / Chairs / Msc fixtures and fittings / Furnitures 1.4 Tonnes Estimated based on matterport survey, Half tunnel fitted out as office Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors 0.0 Tonnes Space			514.9	Tonnes	of 2300kg/m3)
Desks / Chairs / Msc fixtures and fittings / Furnitures all occupied floors Floor Tiles (Assumed ceramic tile) Tiled floor space per floor 183.8 m2 The assumption that 1/3 the floor space is ceramic tiling (14kg per m2) Total Volume of floor Tiles 0.003 0.6 m3 Thickness assumption based on average thickness of commercial tiles (0.003m) Tile tonnes 0.0026 0.5 Tonnes Weight conversion based on referenced websites (2.6kg per m2) Floor Tiles (Vinyl) Tiled floor space per floor 183.8 m2 Vinyl flooring (Office portion) (2.6kg per m2) 3rd of floor space Total Volume of floor Tiles 0.003 0.6 m3 Thickness assumption based on average thickness of commercial tiles (0.003m) The tonnes 0.003 0.6 m3 Thickness assumption based on referenced websites (2.6kg per m2) Thickness assumption based on average thickness of commercial tiles (0.003m) Thickness assumption based on average thickness of commercial tiles (0.003m) Tile tonnes 183.8 m2 The assumption based on referenced websites (2.6kg per m2) Thickness assumption based on referenced websites (2.6kg per m2) Total Volume of Ceiling Tiles (Mineral Fibre acoustic boards) Mineral Fibre Ceiling tiles 183.8 m2 The assumption that 1/3 the floor space 183.8 m2 The assumption based on referenced websites (2.6kg per m2) Total Volume of Ceiling Tiles 0.0015 0.3 m3 Thickness assumption based on referenced websites (2.6kg per m2) Total Volume of Ceiling Tiles 0.0015 0.3 m3 Thickness assumption based on referenced websites (1m2=3.47kg) Total Volume of Ceiling Tiles 183.8 m2 The assumption that 1/3 the ceiling is office tiling Total Volume of Ceiling Tiles 0.0015 0.3 m3 Thickness assumption that 1/3 the floor space 183.8 m2 The assumption that 1/3 the floor space 183.8 m2 The assumption that 1/3 the floor space on referenced websites (1m2=3.47kg) Total Volume of Ceiling Tiles 0.0015 0.0015 0.0015 0.0015 0.0015 0.0016 0.0017 0.0017 0.0018 0.0018 0.0018 0.0018 0.0019 0.0019 0.0019 0.0019 0.0019 0.0019 0.0019 0.0019 0.001					
Floor Tiles (Assumed ceramic tile) Tiled floor space per floor 183.8 m2 The assumption that 1/3 the floor space is ceramic tiling (14kg per m2) Total Volume of floor Tiles 0.003 0.6 m3 Thickness assumption based on average thickness of commercial tiles (0.003m) Tile tonnes 0.0026 0.5 Tonnes Weight conversion based on referenced websites (2.6kg per m2) Total Volume of floor Tiles 183.8 m2 Vinyl flooring (Office portion) (2.6kg per m2) 3rd of floor space Total Volume of floor Tiles 0.003 0.6 m3 Thickness assumption based on average thickness of commercial tiles (0.003m) Tile tonnes 0.003 0.6 m3 Thickness assumption based on average thickness of commercial tiles (0.003m) Tile tonnes Ceiling Tiles (Mineral Fibre acoustic boards) Mineral Fibre Ceiling tiles 183.8 m2 The assumption that 1/3 the ceiling is office tiling Total Volume of Ceiling Tiles 0.0015 0.3 m3 Thickness assumption based on average thickness of colling tiles (0.0015m) Tile tonnes 0.0015 0.3 m3 Thickness assumption based on average thickness of ceiling tiles (0.0015m) Tile tonnes 0.0034 0.6 Tonnes Weight conversion based on referenced websites (1m2=3.47kg) The assumption that 1/3 the ceiling is office tiling Weight conversion based on average thickness of ceiling tiles (0.0015m) Tile tonnes 0.0034 0.6 Tonnes Weight conversion based on referenced websites (1m2=3.47kg) Assumption that carpet covers 1/3 of the floor space Carpet Tonnes Online sources show 550g per m2	<u> </u>		1.4	Tonnes	Estimated based on matteprort survey, Half tunnel fitted out as office
Tiled floor space per floor 183.8 m2 The assumption that 1/3 the floor space is ceramic tiling (14kg per m2) Total Volume of floor Tiles 0.003 0.6 m3 Thickness assumption based on average thickness of commercial tiles (0.003m) Tile tonnes 0.0026 0.5 Tonnes Weight conversion based on referenced websites (2.6kg per m2) Floor Tiles (Vinyl) Tiled floor space per floor 183.8 m2 Vinyl flooring (Office portion) (2.6kg per m2) 3rd of floor space Total Volume of floor Tiles 0.003 0.6 m3 Thickness assumption based on average thickness of commercial tiles (0.003m) Tile tonnes 0.0026 0.5 Tonnes weight conversion based on referenced websites (2.6kg per m2) Ceiling Tiles (Mineral Fibre acoustic boards) Mineral Fibre Ceiling tiles 183.8 m2 The assumption that 1/3 the ceiling is office tiling Total Volume of Ceiling Tiles 0.0015 0.3 m3 Thickness assumption based on average thickness of ceiling tiles (0.0015m) Tile tonnes 0.0034 0.6 Tonnes Weight conversion based on average thickness of ceiling tiles (0.0015m) Tile tonnes 0.0034 0.6 Tonnes Weight conversion based on referenced websites (1m2=3.47kg) Carpet thickness 0.011 1.6 m3 Carpet Tonnes Online sources show 550g per m2			0.0	Tonnes	space
Total Volume of floor Tiles 0.003 0.6 m3 Thickness assumption based on average thickness of commercial tiles (0.003m) Tile tonnes 0.0026 0.5 Tonnes Weight conversion based on referenced websites (2.6kg per m2) Floor Tiles (Vinyl) Tiled floor space per floor 183.8 m2 Vinyl flooring (Office portion) (2.6kg per m2) 3rd of floor space Total Volume of floor Tiles 0.003 0.6 m3 Thickness assumption based on average thickness of commercial tiles (0.003m) Tile tonnes 0.0026 0.5 Tonnes weight conversion based on referenced websites (2.6kg per m2) Ceiling Tiles (Mineral Fibre acoustic boards) Mineral Fibre Ceiling tiles 183.8 m2 The assumption that 1/3 the ceiling is office tiling Total Volume of Ceiling Tiles 0.0034 0.6 Tonnes Weight conversion based on average thickness of ceiling tiles (0.0015m) Tile tonnes 0.0034 0.6 Tonnes Weight conversion based on referenced websites (1m2=3.47kg) Carpets Total area of carpet 157.5 m2 Assumption that carpet covers 1/3 of the floor space Carpet thickness 0.01 1.6 m3 Carpet Tonnes Online sources show 550g per m2	Floor Tiles (Assumed ceramic tile)				
Tile tonnes	Tiled floor space per floor		183.8	m2	The assumption that 1/3 the floor space is ceramic tiling (14kg per m2)
Tile tonnes 0.0026 0.5 Tonnes Weight conversion based on referenced websites (2.6kg per m2) Floor Tiles (Vinyl) Tiled floor space per floor 183.8 m2 Vinyl flooring (Office portion) (2.6kg per m2) 3rd of floor space Total Volume of floor Tiles 0.003 0.6 m3 Tile tonnes 0.0026 0.5 Tonnes weight conversion based on average thickness of commercial tiles (0.003m) Wineral Fibre acoustic boards) Mineral Fibre Ceiling Tiles (Mineral Fibre acoustic boards) Total Volume of Ceiling Tiles 0.0015 0.3 m3 Thickness assumption that 1/3 the ceiling is office tiling Total Volume of Ceiling Tiles 0.0015 0.3 m3 Thickness assumption based on average thickness of ceiling tiles (0.0015m) Tile tonnes 0.0034 0.6 Tonnes Weight conversion based on referenced websites (1m2=3.47kg) Carpets Total area of carpet 157.5 m2 Assumption that carpet covers 1/3 of the floor space Carpet Tonnes 0.055 0.9 Tonnes Online sources show 550g per m2	Total Volume of floor Tiles	0.003	0.6	m3	, ,
Floor Tiles (Vinyl) Tiled floor space per floor Total Volume of floor Tiles 0.003 0.6 m3 Thickness assumption based on average thickness of commercial tiles (0.003m) Tile tonnes 0.0026 0.5 Tonnes weight conversion based on referenced websites (2.6kg per m2) Ceiling Tiles (Mineral Fibre acoustic boards) Mineral Fibre Ceiling Tiles 183.8 m2 The assumption that 1/3 the ceiling is office tiling Total Volume of Ceiling Tiles 0.0015 0.3 m3 Thickness assumption based on average thickness of ceiling is office tiling Total Volume of Ceiling Tiles 0.0015 0.3 m3 Thickness assumption based on average thickness of ceiling tiles (0.0015m) Tile tonnes 0.0034 0.6 Tonnes Weight conversion based on referenced websites (1m2=3.47kg) Carpets Total area of carpet 157.5 m2 Assumption that carpet covers 1/3 of the floor space Carpet thickness 0.01 1.6 m3 Carpet Tonnes Online sources show 550g per m2	Tile tonnes	0.0026	0.5	Tonnes	, ,
Total Volume of floor Tiles 0.003 0.6 m3 Thickness assumption based on average thickness of commercial tiles (0.003m) Tile tonnes 0.0026 0.5 Tonnes weight conversion based on referenced websites (2.6kg per m2) Ceiling Tiles (Mineral Fibre acoustic boards) Mineral Fibre Ceiling tiles 183.8 m2 The assumption that 1/3 the ceiling is office tiling Total Volume of Ceiling Tiles 0.0015 0.3 m3 Thickness assumption based on average thickness of ceiling tiles (0.0015m) Tile tonnes 0.0034 0.6 Tonnes Weight conversion based on referenced websites (1m2=3.47kg) Carpets Total area of carpet 157.5 m2 Assumption that carpet covers 1/3 of the floor space Carpet thickness 0.01 1.6 m3 Carpet Tonnes Online sources show 550g per m2	Floor Tiles (Vinyl)				
Tile tonnes Ceiling Tiles (Mineral Fibre acoustic boards) Mineral Fibre Ceiling Tiles 183.8 Total Volume of Ceiling Tiles Total Seiling Tiles 183.8 Total Volume of Ceiling Tiles Total Seiling Tiles	Tiled floor space per floor		183.8	m2	Vinyl flooring (Office portion) (2.6kg per m2) 3rd of floor space
Tile tonnes 0.0026 0.5 Tonnes weight conversion based on referenced websites (2.6kg per m2) Ceiling Tiles (Mineral Fibre acoustic boards) Mineral Fibre Ceiling tiles 183.8 m2 The assumption that 1/3 the ceiling is office tiling Total Volume of Ceiling Tiles 0.0015 0.3 m3 Thickness assumption based on average thickness of ceiling tiles (0.0015m) Tile tonnes 0.0034 0.6 Tonnes Weight conversion based on referenced websites (1m2=3.47kg) Carpets Total area of carpet 157.5 m2 Assumption that carpet covers 1/3 of the floor space Carpet thickness 0.01 1.6 m3 Carpet Tonnes 0.55 0.9 Tonnes Online sources show 550g per m2	Total Volume of floor Tiles	0.003	0.6	m3	
Ceiling Tiles (Mineral Fibre acoustic boards)Mineral Fibre Ceiling tiles183.8m2The assumption that 1/3 the ceiling is office tilingTotal Volume of Ceiling Tiles0.00150.3m3Thickness assumption based on average thickness of ceiling tiles (0.0015m)Tile tonnes0.00340.6TonnesWeight conversion based on referenced websites (1m2=3.47kg)Carpets157.5m2Assumption that carpet covers 1/3 of the floor spaceCarpet thickness0.011.6m3Carpet Tonnes0.550.9TonnesOnline sources show 550g per m2	Tile tonnes	0.0026	0.5	Tonnes	(
Total Volume of Ceiling Tiles 0.0015 0.3 m3 Thickness assumption based on average thickness of ceiling tiles (0.0015m) Tile tonnes 0.0034 0.6 Tonnes Weight conversion based on referenced websites (1m2=3.47kg) Carpets Total area of carpet 157.5 m2 Assumption that carpet covers 1/3 of the floor space Carpet thickness 0.01 1.6 m3 Carpet Tonnes Online sources show 550g per m2	Ceiling Tiles (Mineral Fibre acoustic boards)				
Tile tonnes 0.0034 0.6 Tonnes Weight conversion based on referenced websites (1m2=3.47kg) Carpets Total area of carpet 157.5 m2 Assumption that carpet covers 1/3 of the floor space Carpet thickness 0.01 1.6 m3 Carpet Tonnes 0.55 0.9 Tonnes Online sources show 550g per m2	Mineral Fibre Ceiling tiles		183.8	m2	The assumption that 1/3 the ceiling is office tiling
Carpets Total area of carpet 157.5 m2 Assumption that carpet covers 1/3 of the floor space Carpet thickness 0.01 1.6 m3 Carpet Tonnes 0.55 0.9 Tonnes Online sources show 550g per m2	Total Volume of Ceiling Tiles	0.0015	0.3	m3	Thickness assumption based on average thickness of ceiling tiles (0.0015m)
Carpets Total area of carpet 157.5 m2 Assumption that carpet covers 1/3 of the floor space Carpet thickness 0.01 1.6 m3 Carpet Tonnes 0.55 0.9 Tonnes Online sources show 550g per m2	Tile tonnes	0.0034	0.6	Tonnes	Weight conversion based on referenced websites (1m2=3.47kg)
Total area of carpet 157.5 m2 Assumption that carpet covers 1/3 of the floor space Carpet thickness 0.01 1.6 m3 Carpet Tonnes 0.55 0.9 Tonnes Online sources show 550g per m2					
Carpet thickness 0.01 1.6 m3 Carpet Tonnes Online sources show 550g per m2	•		157.5	m2	Assumption that carpet covers 1/3 of the floor space
Carpet Tonnes 0.55 0.9 Tonnes Online sources show 550g per m2	<u>'</u>	0.01			,
	'	0.55	0.9	Tonnes	Online sources show 550g per m2
	Water pipework				

Water pipework	0.015	82.2	m	Length of tunnel plus width in m. based on assumptions. 0.015m based on referenced websites.
Steel Pipework	0.96	1.2	Tonnes	1m steel pipe = 0.0015 tonnes (25mm dia pipe with 2.5mm thick walls)
Electrical				
LV Electrical cables		300.0	m	Assumed 4 lengths off tunnel for distribution
Volume in m3 for LV Electrical cables	0.04	12.0	m3	Assumption based on referenced websites
Volume in tonnes for LV electrical cables	0.015	0.2	Tonnes	
Fluorescent Lighting per floor		40.0	No.	Based on assumptions
Total volume Florescent Lighting		0.0	Tonnes	95g each flourescent tube aprox
Bakerlite pannels (Identified in asbestos management survey)				
Total Bakerlite panneling		1503.5	m2	Assumptions from Matterport survey Bakerlite panel weight = 1250kg / m3 (fitted out office, 20% added for partition walls)
Bakerlite panneling m3	0.002	3.0	m3	Bakerlite pannel thickness 2mm
Bakerlite panneling tonnes	1.25	3.8	Tonnes	
Doors	·			
Doors		25.0	No.	Assumption from matterport survey
Weight of doors tonnes	0.04	1.0	Tonnes	Weight based on referenced website average 40kg per door - 1m3 = 1000kg
Ventilation ducting				
Ductwork for Air handling units		1.1	Tonnes	Approximately 1 lengths of the tunnel (15kg/m)
Additional Plant				
Asbestos 3 stage Decontamination Unit		0.9	Tonnes	930 kg average unit
Total		0.9	Tonnes	



Service Avenue

Usage: Housing Vent plant

1st half furnishings; Bare tunnel lining with Ventialtion plant present, ceramic tiles and concrete plinths 2nd half furnishings:

Item	No.	Sum	Unit	Notes / Assumptions
General				
Floor space area (GIA)		308.0	m2	Total Floor area - approximate based on Matterport surevy
Tunnel bore height (including concrete floor)		5.7	m	Measurement from floor to roof of tunnel bore
Length of Tunnel		44.0	m	Length of tunnel
Diameter of Tunnel		7.2	m	Average width assumed constant throughout tunnel
Radius of tunnel		3.6	m	Width halved
Floor width		7.0	m	floor width within bottom 10th of tunnel bore
Total internal surface area of tunnel minus floor space area		768.7	m2	2x πr2 Plus 2πr2xL
Concrete	•			
		223.9		Approximate concrete within base of tunnel bore, not accounting for
Total volume concrete floor		223.9	m3	drainage and or service ducting - assumed removal of 50%
Total concrete (in situ quantities pre processing)		223.9	m3	Based on the above assumptions and calculations - Tonnes conversion
Processed concrete volume (inc bulking factor)		380.6	m3	factors based on referenced websites and standard guidance (Bulk density
Concrete tonnes conversation		514.9	Tonnes	of 2300kg/m3)
Floor Tiles (Ceramic)				
Tiled floor space per floor		308.0	m2	The assumption that the floor space is ceramic tiling (14kg per m2)
Total Volume of floor Tiles	0.003	0.9	m3	Thickness assumption based on average thickness of commercial tiles (0.003m)
Tile tonnes	0.0026	0.8	Tonnes	Weight conversion based on referenced websites (2.6kg per m2)
Water pipework				
Water pipework	0.015	51.2	m	Length of tunnel plus width in m. based on assumptions. 0.015m based on referenced websites.
Steel Pipework	0.96	0.8	Tonnes	1m steel pipe = 0.0015 tonnes (25mm dia pipe with 2.5mm thick walls)
Electrical				
LV Electrical cables		176.0	m	Assumed 4 lengths off tunnel for distribution
Volume in m3 for LV Electrical cables	0.04	7.0	m3	Assumption based on referenced websites
Volume in tonnes for LV electrical cables	0.015	0.1	Tonnes	
Fluorescent Lighting per floor		40.0	No.	Based on assumptions
Total volume Florescent Lighting		0.0	Tonnes	95g each flourescent tube aprox
Bakerlite pannels (Identified in asbestos management survey)				
Total Bakerlite panneling		308.0	m2	Assumptions from Matterport survey Bakerlite panel weight = 1250kg / m3 (Roof coverage)
Bakerlite panneling m3	0.002	0.6	m3	Bakerlite pannel thickness 2mm
Bakerlite panneling tonnes	1.25	0.8	Tonnes	
Additional Plant				

Water chiller unit	1	0.2	Tonnes	Assumption of 192kg taken from modern equivalent and observation from matterport survey
Air Handling Unit	1	2.1	i ionnes	weight taken from a modern modular packaged air handling unit (NuAire - NA17-220/130 - 2.13 tonnes per unit)
Total		2.3	Tonnes	



Goods Avenue

Usage: Bare tunnel bore service tunnel between service avenue and goods avenue 1st half furnishings;

Item	No.	Sum	Unit	Notes / Assumptions				
General								
Floor space area (GIA)		109.82	m2	Total Floor area - approximate based on Matterport surevy				
Tunnel bore height (including concrete floor)		2.78	m	Measurement from floor to roof of tunnel bore				
Length of Tunnel		38	m	Length of tunnel				
Diameter of Tunnel		3.68	m	Average width assumed constant throughout tunnel				
Radius of tunnel		1.84	m	Width halved				
Floor width		2.89	m	floor width within bottom 10th of tunnel bore				
Total internal surface area of tunnel minus floor space area		350.7726689	m2	2x πr2 Plus 2πr2xL				
Concrete								
		38.3		Approximate concrete within base of tunnel bore, not accounting for				
Total volume concrete floor		30.3	m3	drainage and or service ducting - assumed removal of 50%				
Total concrete (in situ quantities pre processing)		38.3	m3	Based on the above assumptions and calculations - Tonnes conversion				
Processed concrete volume (inc bulking factor)		65.11	m3	factors based on referenced websites and standard guidance (Bulk density				
Concrete tonnes conversation		88.09	Tonnes	of 2300kg/m3)				



Goods Alley

Usage: Bare tunnel bore service tunnel between goods avenue and telecoms switchroom

1st half furnishings; bare tunnel and concrete floors

2nd half furnishings:

Item	No.	Sum	Unit	Notes / Assumptions				
General								
Floor space area (GIA)		132.9	m2	Total Floor area - approximate based on Matterport surevy				
Tunnel bore height (including concrete floor)		3.7	m	Measurement from floor to roof of tunnel bore				
Length of Tunnel		44.6	m	Length of tunnel				
Diameter of Tunnel		4.6	m	Average width assumed constant throughout tunnel				
Radius of tunnel		2.3	m	Width halved				
Floor width		3.0	m	floor width within bottom 10th of tunnel bore				
Total internal surface area of tunnel minus floor space area		541.7	m2	2x πr2 Plus 2πr2xL				
Concrete								
		49.3		Approximate concrete within base of tunnel bore, not accounting for				
Total volume concrete floor		49.5	m3	drainage and or service ducting - assumed removal of 50%				
Total concrete (in situ quantities pre processing)		49.3	m3	Based on the above assumptions and calculations - Tonnes conversion				
Processed concrete volume (inc bulking factor)		83.7	m3	factors based on referenced websites and standard guidance (Bulk density				
Concrete tonnes conversation		113.3	Tonnes	of 2300kg/m3)				



Telecoms room

Usage: Bare tunnel bore with telecoms switchroom

1st half furnishings; bare tunnel with telecoms switchgear and ceramic flooring

2nd half furnishings:

Item	No.	Sum	Unit	Notes / Assumptions
General				
Floor space area (GIA)		99.0	m2	Total Floor area - approximate based on Matterport surevy
Tunnel bore height (including concrete floor)		5.7	m	Measurement from floor to roof of tunnel bore
Length of Tunnel		16.5	m	Length of tunnel
Diameter of Tunnel		7.2	m	Average width assumed constant throughout tunnel
Radius of tunnel		3.6	m	Width halved
Floor width		6.0	m	floor width within bottom 10th of tunnel bore
Total internal surface area of tunnel minus floor space area		355.7	m2	2x πr2 Plus 2πr2xL
Concrete				
		49.3		Approximate concrete within base of tunnel bore, not accounting for
Total volume concrete floor		45.5	m3	drainage and or service ducting - assumed removal of 50%
Total concrete (in situ quantities pre processing)		49.3	m3	Based on the above assumptions and calculations - Tonnes conversion
Processed concrete volume (inc bulking factor)		83.7	m3	factors based on referenced websites and standard guidance (Bulk density
Concrete tonnes conversation		113.3	Tonnes	of 2300kg/m3)
Floor Tiles (Assumed ceramic tile)				
Tiled floor space per floor		99.0	m2	The assumption that the floor space is ceramic tiling (14kg per m2)
Total Volume of floor Tiles	0.003	0.3	m3	Thickness assumption based on average thickness of commercial tiles (0.003m)
Tile tonnes	0.0026	0.3	Tonnes	Weight conversion based on referenced websites (2.6kg per m2)
Water pipework				
Water pipework	0.015	23.7	m	Length of tunnel plus width in m. based on assumptions. 0.015m based on referenced websites.
Steel Pipework	0.96	0.4	Tonnes	1m steel pipe = 0.0015 tonnes (25mm dia pipe with 2.5mm thick walls)
Electrical				
LV Electrical cables		66.0	m	Assumed 4 lengths off tunnel for distribution
Volume in m3 for LV Electrical cables	0.04	2.6	m3	Assumption based on referenced websites
Volume in tonnes for LV electrical cables	0.015	0.0	Tonnes	
Fluorescent Lighting per floor		20.0	No.	Based on assumptions
Total volume Florescent Lighting		0.0	Tonnes	95g each flourescent tube aprox
Bakerlite pannels (Identified in asbestos management survey)				
Total Bakerlite panneling		99.0	m2	Assumptions from Matterport survey Bakerlite panel weight = 1250kg / m3 (Roof coverage)
Bakerlite panneling m3	0.002	0.2	m3	Bakerlite pannel thickness 2mm
Bakerlite panneling tonnes	1.25	0.2	Tonnes	
Additional Plant				
Telecoms exchange racking		1.2	Tonnes	Assumption based on Matterport survey

I= · •		_
Total	1 1 7	Tonnoc
IIUlai	1.2	Ionnes



First Aid Bay

Usage: Bakelite roof and ceramic floor tiles

1st half furnishings; bare room

2nd half furnishings:

Item	No.	Sum	Unit	Notes / Assumptions
General				
Floor space area (GIA)		59.4	m2	Total Floor area - approximate based on Matterport surevy
Tunnel bore height (including concrete floor)		2.3	m	Measurement from floor to roof of tunnel bore
Length of Tunnel		19.8	m	Length of tunnel
Diameter of Tunnel		3.7	m	Average width assumed constant throughout tunnel
Radius of tunnel		1.8	m	Width halved
Floor width		3.0	m	floor width within bottom 10th of tunnel bore
Total internal surface area of tunnel minus floor space area		190.8	m2	2x πr2 Plus 2πr2xL
Concrete		,		
		25.4		Approximate concrete within base of tunnel bore, not accounting for
Total volume concrete floor		36.1	m3	drainage and or service ducting - assumed removal of 50%
Total concrete (in situ quantities pre processing)		36.1	m3	Based on the above assumptions and calculations - Tonnes conversion
Processed concrete volume (inc bulking factor)		61.3	m3	factors based on referenced websites and standard guidance (Bulk density
Concrete tonnes conversation		82.9	Tonnes	of 2300kg/m3)
Miscallaneous Office Equipment & Hard furnishings (soft strip malterial)				
Showers and toilets	1	0.0	Tonnes	Assumption from matterport survey of 1 toilet and wash facilities
Floor Tiles (Assumed ceramic tile)				
Tiled floor space per floor		59.4	m2	Assumption that all of the floor space is tiling
Total Volume of floor Tiles	0.003	0.2	m3	Thickness assumption based on average thickness of commercial tiles (0.003m)
Tile tonnes	0.0026	0.2	Tonnes	Weight conversion based on referenced websites (2.6kg per m2)
Water pipework		,		, <u> </u>
Water pipework	0.015	23.5	m	Length of tunnel plus width in m. based on assumptions. 0.015m based on referenced websites.
Steel Pipework	0.96	0.4	Tonnes	1m steel pipe = 0.0015 tonnes (25mm dia pipe with 2.5mm thick walls)
Electrical				
LV Electrical cables		79.2	m	Assumed 4 lengths off tunnel for distribution
Volume in m3 for LV Electrical cables	0.04	3.2	m3	Assumption based on referenced websites
Volume in tonnes for LV electrical cables	0.015	0.0	Tonnes	
Fluorescent Lighting per floor		20.0	No.	Based on assumptions
Total volume Florescent Lighting		0.0	Tonnes	95g each flourescent tube aprox
Bakerlite pannels (Identified in asbestos management survey)				
Total Bakerlite panneling		59.4	m2	Assumptions from Matterport survey Bakerlite panel weight = 1250kg / m3 (Roof coverage)
Bakerlite panneling m3	0.002	0.1	m3	Bakerlite pannel thickness 2mm
Bakerlite panneling tonnes	1.25	0.1	Tonnes	
Doors	•	•	•	

Doors		4.0	No.	Assumption from matterport survey
Weight of doors tonnes	0.04	0.2	Tonnes	Weight based on referenced website average 40kg per door - 1m3 = 1000kg



Female toilets (east)

Usage: Female toilets

1st half furnishings; Toilet facilities 6 hand basins and 10 cubicles

Tunnel bore height (including concrete floor) Length of Tunnel Diameter of Tunnel Diameter of Tunnel 3.7 m Average width assumed consequence of tunnel 1.9 m Width halved Floor width Total internal surface area of tunnel minus floor space area 178.6 m2 2x π2 Plus 2π2xL Concrete Area of Dividing Blockwork walls 49.5 m2 tunnel length x height Total volume concrete floor Total volume of concrete walls 7.4 m3 Wall thickness measured from total concrete (in situ quantities pre processing) Processed concrete volume (inc bulking factor) Concrete tonnes conversation Miscallaneous Hard furnishings (soft strip malterial) Toilet s and hand basins 6 0.2 Tonnes Matterport survey indicates of thickness assumption based in the floor space of the floor space procession and the floor space procession and the floor space procession and the floor space per floor Total Volume of floor Tiles 7.5.2 m2 Assumption that the floor space of the floor space per floor Total Volume of floor Tiles 2.4 9.0 Tonnes weight conversion based on the space per floor Total Volume of floor Tiles Tile tonnes 2.4 9.0 Tonnes Weight conversion based on the space per floor Water pipework	tant throughout tunnel the of tunnel bore
Tunnel bore height (including concrete floor) Length of Tunnel Diameter of Untunel length x height Diameter of Ununel leng	coof of tunnel bore cant throughout tunnel ch of tunnel bore
Length of Tunnel 19.8 m Length of tunnel Diameter of Tunnel 3.7 m Average width assumed cons Radius of tunnel 1.9 m Width halved Floor width 3.8 m floor width within bottom 10 Total linternal surface area of tunnel minus floor space area 178.6 m2 2x π/2 Plus 2π/2xL Concrete Area of Dividing Blockwork walls 49.5 m2 tunnel length x height Approximate concrete within drainage and or service duction 31.1 m/d proximate concrete within drainage and or service duction Total volume of concrete walls 7.4 m3 Wall thickness measured from the above assumption assumption factors based on the above assumption assumption factors based on referenced was accorded to the space of the s	tant throughout tunnel
Diameter of Tunnel 3.7 m Average width assumed consequence of tunnel 1.9 m Width halved 1.0 m Width halved 1.0 m Miscallaneous Hard furnishings (soft strip malterial) 1.9 m Width halved 1.0 m Mater pipework 1.9 m Width halved 1.9 m Width halved 1.9 m Width halved 1.0 m Midth hal	h of tunnel bore
Radius of tunnel Floor width Total volume concrete floor Total volume of concrete walls Total volume of concrete wills Total concrete (in situ quantities pre processing) Processed concrete volume (inc bulking factor) Concrete volume (sone starting malterial) Toilets and hand basins Floor Tiles (Ceramic) Total Volume of floor Tiles Total Volume of Processed to Total Volume of V	h of tunnel bore
Floor width Total internal surface area of tunnel minus floor space area Total olume concrete floor Total volume of concrete walls Processed concrete volume (inc bulking factor) Concrete tonnes conversation Miscallaneous Hard furnishings (soft strip malterial) Total Volume of floor Tiles Total Vol	
Total internal surface area of tunnel minus floor space area Concrete Area of Dividing Blockwork walls Approximate concrete within drainage and or service ducti Total volume of concrete walls Total volume of concrete walls Total concrete (in situ quantities pre processing) Processed concrete volume (inc bulking factor) Concrete tonnes conversation Miscallaneous Hard furnishings (soft strip malterial) Toilets and hand basins Floor Tiles (Ceramic) Tiled floor space per floor Total Volume of floor Tiles 0.05 3.8 m3 Thickness assumption based (0.05m) Weight conversion based on rewater on the procession based on rewater on the processed on the solution of the processed on the processed on the solution of the processed on the solutio	
Concrete Area of Dividing Blockwork walls Area of Dividing Blockwork walls 49.5 m2 tunnel length x height 31.1 m3 Approximate concrete within drainage and or service ducti Total volume of concrete walls Total concrete (in situ quantities pre processing) Processed concrete volume (inc bulking factor) Concrete tonnes conversation Miscallaneous Hard furnishings (soft strip malterial) Toilets and hand basins Floor Tiles (Ceramic) Tiled floor space per floor Total Volume of floor Tiles 2.4 9.0 Tonnes weight conversion based on re Water pipework	
Area of Dividing Blockwork walls Area of Dividing Blockwork walls Barpoximate concrete within drainage and or service duction drainage and or service ductio	
Approximate concrete within drainage and or service ducti Total volume of concrete walls Total concrete (in situ quantities pre processing) Processed concrete volume (inc bulking factor) Concrete tonnes conversation Miscallaneous Hard furnishings (soft strip malterial) Toilets and hand basins Floor Tiles (Ceramic) Total Volume of floor Tiles Total Volume of floor Tiles Tile tonnes Approximate concrete within drainage and or service ducti M3 Wall thickness measured from Season the above assumpting factors based on referenced with the season preferenced with the season prefe	
Total volume concrete floor Total volume of concrete walls Total concrete (in situ quantities pre processing) Processed concrete volume (inc bulking factor) Concrete tonnes conversation Miscallaneous Hard furnishings (soft strip malterial) Toilets and hand basins Floor Tiles (Ceramic) Total Volume of floor Tiles Total Volume of floor Tiles Total Volume of floor Tiles Tile tonnes Total Volume of Ploor Tiles	
Total volume concrete floor Total volume of concrete walls Total concrete (in situ quantities pre processing) Processed concrete volume (inc bulking factor) Concrete tonnes conversation Miscallaneous Hard furnishings (soft strip malterial) Toilets and hand basins Floor Tiles (Ceramic) Tiled floor space per floor Total Volume of floor Tiles Tile tonnes Tile tonnes Assumption that the floor space on reference of the floor space per floor Tile tonnes 2.4 9.0 Tonnes Matterport survey indicates of thickness assumption based on reference of the floor space per floor on the floor	base of tunnel bore, not accounting for
Total concrete (in situ quantities pre processing) Processed concrete volume (inc bulking factor) Concrete tonnes conversation Miscallaneous Hard furnishings (soft strip malterial) Toilets and hand basins Floor Tiles (Ceramic) Tiled floor space per floor Total Volume of floor Tiles Tile tonnes 38.5 m3 Based on the above assumption factors based on referenced to 65.5 m3 factors based on referenced to 62300kg/m3) Matterport survey indicates 6 0.2 Tonnes Matterport survey indicates 6 Floor Tiles (Ceramic) Total Volume of floor Tiles 0.05 3.8 m3 Thickness assumption based (0.05m) Tile tonnes 2.4 9.0 Tonnes weight conversion based on rewards and the floor space per floor for the floor space per floor	ng - assumed removal of 50%
Processed concrete volume (inc bulking factor) Concrete tonnes conversation Miscallaneous Hard furnishings (soft strip malterial) Toilets and hand basins Floor Tiles (Ceramic) Tiled floor space per floor Total Volume of floor Tiles Tile tonnes Total volume of floor Tiles Tile tonnes Total volume of floor Tiles Tile tonnes Total volume of floor Tiles	n matteport survey 0.15
Concrete tonnes conversation 88.6 Tonnes of 2300kg/m3) Miscallaneous Hard furnishings (soft strip malterial) Toilets and hand basins 6 0.2 Tonnes Matterport survey indicates 6 Floor Tiles (Ceramic) 75.2 m2 Assumption that the floor sp Tiled floor space per floor 75.2 m2 Assumption that the floor sp Total Volume of floor Tiles 0.05 3.8 m3 Thickness assumption based (0.05m) Tile tonnes 2.4 9.0 Tonnes weight conversion based on reward to the proposed of the proposed	ons and calculations - Tonnes conversion
Miscallaneous Hard furnishings (soft strip malterial) Toilets and hand basins 6 0.2 Tonnes Matterport survey indicates 6 Floor Tiles (Ceramic) Tiled floor space per floor 75.2 m2 Assumption that the floor space per floor Total Volume of floor Tiles 0.05 3.8 m3 Thickness assumption based (0.05m) Tile tonnes 2.4 9.0 Tonnes weight conversion based on the Water pipework	vebsites and standard guidance (Bulk density
Toilets and hand basins 6 0.2 Tonnes Matterport survey indicates 6 Floor Tiles (Ceramic) Tiled floor space per floor 75.2 m2 Assumption that the floor space per floor Total Volume of floor Tiles 0.05 3.8 m3 Thickness assumption based (0.05m) Tile tonnes 2.4 9.0 Tonnes weight conversion based on the Water pipework	
Floor Tiles (Ceramic) Tiled floor space per floor Total Volume of floor Tiles 0.05 Tile tonnes 2.4 9.0 Tonnes weight conversion based on recommendations and the floor space of	
Tiled floor space per floor Total Volume of floor Tiles 0.05 3.8 m3 Thickness assumption based (0.05m) Tile tonnes 2.4 9.0 Tonnes Water pipework	toilet and wash facilities
Total Volume of floor Tiles 0.05 3.8 m3 Thickness assumption based (0.05m) Tile tonnes 2.4 9.0 Tonnes weight conversion based on remaining the conversion based on rema	
Tile tonnes 2.4 9.0 Tonnes Water pipework	ace is tiling
Water pipework	on average thickness of commercial tiles
Water pipework	eferenced websites
Longth of tunnel plus width is	
Water pipework 0.015 23.5 m Engire of tuline pits with in referenced websites.	m. based on assumptions. 0.015m based on
Steel Pipework 0.96 0.4 Tonnes 1m steel pipe = 0.0015 tonne	(25mm dia pipe with 2.5mm thick walls)
Electrical	
LV Electrical cables 79.2 m Assumed 4 lengths off tunne	for distribution
Volume in m3 for LV Electrical cables 0.04 3.2 m3 Assumption based on referen	ced websites
Volume in tonnes for LV electrical cables 0.015 0.0 Tonnes	
Fluorescent Lighting per floor 20.0 No. Based on assumptions	
Total volume Florescent Lighting 0.0 Tonnes 95g each flourescent tube ap	
Doors	OX
Doors 6.0 No. Assumption from matterport	OX
Weight of doors tonnes 0.04 0.2 Tonnes Weight based on referenced 1000kg	



Male toilets (east)

Usage: Male toilets

1st half furnishings; Toilet facilities 8 hand basins and 10 cubicles

Item	No.	Sum	Unit	Notes / Assumptions
General				
Floor space area (GIA)		69.3	m2	Total Floor area - approximate based on Matterport surevy
Tunnel bore height (including concrete floor)		2.5	m	Measurement from floor to roof of tunnel bore
Length of Tunnel		19.8	m	Length of tunnel
Diameter of Tunnel		3.5	m	Average width assumed constant throughout tunnel
Radius of tunnel		1.8	m	Width halved
Floor width		3.5	m	floor width within bottom 10th of tunnel bore
Total internal surface area of tunnel minus floor space area		167.7	m2	2x πr2 Plus 2πr2xL
Concrete	•		•	
Area of Dividing Blockwork walls		49.5	m2	tunnel length x height
		31.1		Approximate concrete within base of tunnel bore, not accounting for
Total volume concrete floor		31.1	m3	drainage and or service ducting - assumed removal of 50%
Total volume of concrete walls		7.4	m3	Wall thickness measured from matteport survey 0.15
Total concrete (in situ quantities pre processing)		38.5	m3	Based on the above assumptions and calculations - Tonnes conversion
Processed concrete volume (inc bulking factor)		65.5	m3	factors based on referenced websites and standard guidance (Bulk density
Concrete tonnes conversation		88.6	Tonnes	of 2300kg/m3)
Miscallaneous Office Equipment & Hard furnishings (soft strip malterial)				
Toilets and hand basins	10	0.4	Tonnes	Matterport survey indicates 10 toilet and 8 wash facilities
Floor Tiles (Ceramic)				
Tiled floor space per floor		69.3	m2	Assumption that the floor space is tiling
Total Volume of floor Tiles	0.05	3.5	m3	Thickness assumption based on average thickness of commercial tiles (0.05m)
Tile tonnes	2.4	8.3	Tonnes	weight conversion based on referenced websites
Water pipework			•	
Water pipework	0.015	23.3	m	Length of tunnel plus width in m. based on assumptions. 0.015m based on referenced websites.
Steel Pipework	0.96	0.3	Tonnes	1m steel pipe = 0.0015 tonnes (25mm dia pipe with 2.5mm thick walls)
Electrical				
LV Electrical cables		79.2	m	Assumed 4 lengths off tunnel for distribution
Volume in m3 for LV Electrical cables	0.04	3.2	m3	Assumption based on referenced websites
Volume in tonnes for LV electrical cables	0.015	0.0	Tonnes	
Fluorescent Lighting per floor		20.0	No.	Based on assumptions
Total volume Florescent Lighting		0.0	Tonnes	95g each flourescent tube aprox
Doors				
Doors		10.0	No.	Assumption from matterport survey
Weight of doors tonnes	0.04	0.4	Tonnes	Weight based on referenced website average 40kg per door - 1m3 =



Female toilets (West)

Usage: Female toilets

1st half furnishings; Toilet facilities 6 hand basins and 9 cubicles

Item	No.	Sum	Unit	Notes / Assumptions
General				
Floor space area (GIA)		38.5	m2	Total Floor area - approximate based on Matterport surevy
Tunnel bore height (including concrete floor)		2.5	m	Measurement from floor to roof of tunnel bore
Length of Tunnel		13.5	m	Length of tunnel
Diameter of Tunnel		3.5	m	Average width assumed constant throughout tunnel
Radius of tunnel		1.8	m	Width halved
Floor width		2.9	m	floor width within bottom 10th of tunnel bore
Total internal surface area of tunnel minus floor space area		129.2	m2	2x πr2 Plus 2πr2xL
Concrete				
Area of Dividing Blockwork walls		33.8	m2	tunnel length x height
		21.2		Approximate concrete within base of tunnel bore, not accounting for
Total volume concrete floor		21.2	m3	drainage and or service ducting - assumed removal of 50%
Total volume of concrete walls		5.1	m3	Wall thickness measured from matteport survey 0.15
Total concrete (in situ quantities pre processing)		26.3	m3	Based on the above assumptions and calculations - Tonnes conversion
Processed concrete volume (inc bulking factor)		44.7	m3	factors based on referenced websites and standard guidance (Bulk density
Concrete tonnes conversation		60.4	Tonnes	of 2300kg/m3)
Miscallaneous Office Equipment & Hard furnishings (soft strip malterial)				
Toilets and hand basins	9	0.3	Tonnes	Matterport survey indicates 9 toilet and 6 wash facilities
Floor Tiles (Ceramic)				
Tiled floor space per floor		38.5	m2	Assumption that the floor space is tiling
Total Volume of floor Tiles	0.05	1.9	m3	Thickness assumption based on average thickness of commercial tiles (0.05m)
Tile tonnes	2.4	4.6	Tonnes	weight conversion based on referenced websites
Water pipework				
Water pipework	0.015	17.0	т	Length of tunnel plus width in m. based on assumptions. 0.015m based on referenced websites.
Steel Pipework	0.96	0.3	Tonnes	1m steel pipe = 0.0015 tonnes (25mm dia pipe with 2.5mm thick walls)
Electrical				
LV Electrical cables		54.0	m	Assumed 4 lengths off tunnel for distribution
Volume in m3 for LV Electrical cables	0.04	2.2	m3	Assumption based on referenced websites
Volume in tonnes for LV electrical cables	0.015	0.0	Tonnes	
Fluorescent Lighting per floor		20.0	No.	Based on assumptions
Total volume Florescent Lighting		0.0	Tonnes	95g each flourescent tube aprox
Doors				
Doors		10.0	No.	Assumption from matterport survey
Weight of doors tonnes	0.04	0.4	Tonnes	Weight based on referenced website average 40kg per door - 1m3 = 1000kg



male toilets (West)

Usage: male toilets

1st half furnishings; Toilet facilities 8 hand basins and 9 cubicles

Item	No.	Sum	U	Init	Notes / Assumptions		
General							
Floor space area (GIA)		57.0	n	m2	Total Floor area - approximate based on Matterport surevy		
Tunnel bore height (including concrete floor)		2.5		m	Measurement from floor to roof of tunnel bore		
Length of Tunnel		20.0		m	Length of tunnel		
Diameter of Tunnel		3.5		m	Average width assumed constant throughout tunnel		
Radius of tunnel		1.8		m	Width halved		
Floor width		2.9		m	floor width within bottom 10th of tunnel bore		
Total internal surface area of tunnel minus floor space area		182.2	n	n2	2x πr2 Plus 2πr2xL		
Concrete	•						
Area of Dividing Blockwork walls			50.0 n	n2	tunnel length x height		
		31.4			Approximate concrete within base of tunnel bore, not accounting for		
Total volume concrete floor		31.4	l n	n3	drainage and or service ducting - assumed removal of 50%		
Total volume of concrete walls			7.5 n	n3	Wall thickness measured from matteport survey 0.15		
Total concrete (in situ quantities pre processing)		38.9	n	n3	Based on the above assumptions and calculations - Tonnes conversion		
Processed concrete volume (inc bulking factor)		66.2	n	n3	factors based on referenced websites and standard guidance (Bulk density		
Concrete tonnes conversation		89.5	Tor	nnes	of 2300kg/m3)		
Miscallaneous Office Equipment & Hard furnishings (soft strip malterial)							
Toilets and hand basins	8	0.3	Tor	nnes	Matterport survey indicates 9 toilet and 6 wash facilities		
Floor Tiles (Ceramic)							
Tiled floor space per floor		57.0	n	m2	Assumption that the floor space is tiling		
Total Volume of floor Tiles	0.05	2.9	n	n3	Thickness assumption based on average thickness of commercial tiles (0.05m)		
Tile tonnes	2.4	6.8	Tor	nnes	weight conversion based on referenced websites		
Water pipework			•				
Water pipework	0.015	23.5	,	m	Length of tunnel plus width in m. based on assumptions. 0.015m based on referenced websites.		
Steel Pipework	0.96	0.4	Tor	nnes	1m steel pipe = 0.0015 tonnes (25mm dia pipe with 2.5mm thick walls)		
Electrical							
LV Electrical cables		80.0	- 1	m	Assumed 4 lengths off tunnel for distribution		
Volume in m3 for LV Electrical cables	0.04	3.2	n	m3	Assumption based on referenced websites		
Volume in tonnes for LV electrical cables	0.015	0.0	Tor	nnes			
Fluorescent Lighting per floor		20.0	Λ	lo.	Based on assumptions		
Total volume Florescent Lighting		0.0	Tor	nnes	95g each flourescent tube aprox		
Doors							
Doors		10.0	N	۱o.	Assumption from matterport survey		
Weight of doors tonnes	0.04	0.4	Tor	nnes	Weight based on referenced website average 40kg per door - 1m3 =		



Kingsway Tunnels - North Street West

Usage: Canteen/Mess hall and Kitchen 2 half Vent plant and Stores

Furnishings Canteen: Bakelite wall pannels, metal clad strips on roof, mirror and canteen hatch in the canteen, vinyl floor Furnishings stores: Bakelite clad Nissen hut construction with brick partition walls within tunnel bore, Tiled ceramic floor Furnishings vent plant: Bare tunnel bore, ducting & Cyclone fan Air moving Unit, Tiled ceramic floor

Item	No.	Sum	Unit	Notes / Assumptions
General				
Floor space area (GIA)		348.3	m2	Total Floor area - approximate based on Matterport surevy
Tunnel bore height (including concrete floor)		4.1	m	Measurement from floor to roof of tunnel bore
Length of Tunnel		81.0	m	Length of tunnel
Diameter of Tunnel		5.0	m	Average width assumed constant throughout tunnel
Radius of tunnel		2.5	m	Width halved
Floor width		4.3	m	floor width within bottom 10th of tunnel bore
Total internal surface area of tunnel minus floor space area		974.1	m2	2x πr2 Plus 2πr2xL
Concrete Floor				
		1011		Approximate concrete within base of tunnel bore, not accounting for drainage and
Total concrete floor (in situ quantities pre-processing)		104.1	m3	or service ducting - assumed removal of 50%
Processed concrete volume (inc bulking factor)		176.9	m3	Based on the above assumptions and calculations - Tonnes conversion factors
Concrete tonnes conversation		239.4	Tonnes	based on referenced websites and standard guidance (Bulk density of 2300kg/m3)
Miscallaneous Furishings & Hard furnishings (soft strip malterial			1 2111122	
Small Catering kitchen		1.2	Tonnes	Mixed appliance stainless steel kitchen
Floor Tiles (Vinyl)				
Tiled floor space per floor		348.3	m2	Vinyl flooring (Western portion) (2.6kg per m2)
Total Volume of floor Tiles	0.003	1.0	m3	Thickness assumption based on average thickness of commercial tiles (0.003m)
Tile tonnes	0.0026	0.9	Tonnes	weight conversion based on referenced websites (2.6kg per m2)
Floor Tiles (Assumed ceramic tile)				
Tiled floor space per floor		348.3	m2	Ceramic flooring (Eastern portion) (14kg per m2)
Total Volume of floor Tiles	0.006	2.1	m3	Thickness assumption based on average thickness of commercial tiles (0.006m)
Tile tonnes	0.014	4.9	Tonnes	weight conversion based on referenced websites (2.6kg per m2)
Ceiling Tiles	•			, G1 ,
Metal Slat roof (western Half)		276.2	m2	Assumption that metal slat roof (western Portion)
Total Volume of Ceiling Tiles	0.0015	0.4	m3	Thickness assumption based on average thickness of ceiling tiles (0.0015m)
Tile tonnes	0.34	0.1	Tonnes	Weight conversion based on referenced websites
Water pipework				
Water distribution pipework		86.0	т	length of tunnel plus width in m. based on assumptions. 0.015m based on referenced websites.
Steel pipework	0.0015	0.1	Tonnes	1m steel pipe = 0.0015 tonnes (25mm dia pipe with 2.5mm thick walls)
Electrical	<u> </u>	·		
LV Electrical cables		324.0	m	Assumed 4 lengths off tunnel for distribution
Volume in m3 for LV Electrical cables	0.04	13.0	m3	Assumption based on referenced websites

Volume in tonnes for LV electrical cables	0.015	0.2	Tonnes	
Flourescent Lighting	100	100.0	Units	Assume that consistent throughout tunnel
Total volume Florescent Lighting		0.1	Tonnes	95g each flourescent tube aprox
Bakerlite pannels (Identified in asbestos management survey)				
Total Bakerlite panneling		487.1	m2	Assumptions from Matterport survey Bakerlite pannel weight = 1250kg / m3 (Western half of tunnel)
Bakerlite panneling m3	0.002	1.0	m3	Bakerlite pannel thickness 2mm
Bakerlite panneling tonnes	1.25	1.2	tonnes	
Doors				
Fire Doors		4.0	No.	Assumptions from matterport surevy
Weight of doors tonnes	0.04	0.2	Tonnes	Weight based on referenced website average 40kg per door - 1m3 = 1000kg
Ventilation ducting			_	
Ductwork for Air handling units		1.2	Tonnes	Approximately 1 lengths of the tunnel (15kg/m)
Additional Plant				
Air Handling Unit	1	2.1	Tonnes	weight taken from a modern modular packaged air handling unit (NuAire - NA17-220/130 - 2.13 tonnes per unit)
Total		2.1	Tonnes	



South Street West

Usage: 1st half Recreational room with bar, 2nd half separate rooms and 2 diesel generators 1st half furnishings; clad (AIB) - Vynil floor,Bakelite cladding

2nd half furnishings: Offices on one side of tunnel, Brick partition walls with bakelite panelled walls, ceramic tiles, Engine room bare tunnel shield and ducting

Furnishings

Item	No.	Sum	Unit	Notes / Assumptions
General				
Floor space area (GIA)		401.8	m2	Total Floor area - approximate based on Matterport surevy
Tunnel bore height (including concrete floor)		4.1	m	Measurement from floor to roof of tunnel bore
Length of Tunnel		98.0	m	Length of tunnel
Diameter of Tunnel		5.0	m	Average width assumed constant throughout tunnel
Radius of tunnel		2.5	m	Width halved
Floor width		4.1	m	floor width within bottom 10th of tunnel bore
Total internal surface area of tunnel minus floor space area		1189.8	m2	2x πr2 Plus 2πr2xL
Concrete & blockwork tonnes conversation	·			
Area of Dividing Blockwork walls		200.9	m2	50% of the south street west tunnel x height
Total concrete floor (in situ quantities are presented)				Approximate concrete within base of tunnel bore, not accounting for
Total concrete floor (in situ quantities pre-processing)		125.9	m3	drainage and or service ducting - assumed removal of 50%
Total volume of concrete & brick work partition walls	0.15	30.1	m3	Wall thickness measured from matteport survey 0.15
Total concrete (in situ quantities pre processing)		231.0	m3	Based on the above assumptions and calculations - Tonnes conversion
Processed concrete & blockwork volume (inc bulking factor)		445.1	m3	factors based on referenced websites and standard guidance (Bulk density
Concrete & blockwork tonnes conversation		520.7	Tonnes	of 2300kg/m3)
Floor Tiles (Assumed ceramic tile)	•			
Tiled floor space per floor		100.5	m2	Ceramic flooring (Eastern portion) (14kg per m2)
Total Volume of floor Tiles	0.05	5.0	m3	Thickness assumption based on average thickness of commercial tiles (0.006m)
Tile tonnes	0.026	2.6	Tonnes	weight conversion based on referenced websites (2.6kg per m2)
Floor Tiles (Vinyl)				
Tiled floor space per floor		40.2	m2	Vinyl flooring 10% of tunnel floor space (Western portion) (2.6kg per m2)
Total Volume of floor Tiles	0.003	0.1	m3	Thickness assumption based on average thickness of commercial tiles (0.003m)
Tile tonnes	0.0026	0.1	Tonnes	weight conversion based on referenced websites (2.6kg per m2)
Carpets				
Total area of carpet		301.4	m2	Assumption that carpet covers 3/4 of the floor space within tunnels
Carpet Tonnes	0.0055	0.0	Tonnes	Online sources show 550g per m2
Water pipework	<u> </u>			
Water pipework		103.0	m	length of tunnel plus width in m. based on assumptions.
Steel Pipework	0.015	1.5	Tonnes	1m steel pipe = 0.0015 tonnes (25mm dia pipe with 2.5mm thick walls)
Electrical				
LV Electrical cables		392.0	m	Assumed 4 lengths off tunnel for distribution

Total volume in m3 for Electrical cables	0.04	15.7	m3	Assumption based on referenced websites
Total volume in tonnes for electrical cables	0.015	0.2	Tonnes	·
Flourescent Lighting	90			Assumptions from matterport surevy
Total volume Florescent Lighting		1.0	Tonnes	95g each flourescent tube aprox
Bakerlite pannels (Identified in asbestos management survey)				
Total Bakerlite panneling		892.3	m2	Assumptions from Matterport survey Bakerlite pannel weight = 1250kg / m3 (100% coverage Western half of tunnel/ 50% mid tunnel)
Bakerlite panneling m3	0.002	1.8	m2	Bakerlite pannel thickness 2mm
Bakerlite panneling tonnes	1.25	2.2	tonnes	
Doors				
Doors		12.0	No.	Assumptions from matterport surevy
Weight of doors tonnes	0.04	0.5	Tonnes	Weight based on referenced website average 40kg per door - 1m3 = 1000kg
Ventilation ducting				
Ductwork for Air handling units	0	1.5	Tonnes	Approximately 1 lengths of the tunnel (15kg/m)
Plant Room				
2 x Large 6 cylinder Diesel generators		16.0	Tonnes	Assumption from matter port survey as a 6-cylinder Ruston 6APC engine - 8 tonnes
Total		16.0	Tonnes	



North Street Centre

Usage: 1st half of tunnel utilised as power & air movement plant with battery storage rooms & transformer enclosures x 4. 2nd half formed of offices containing electical IT equipment

1st half furnishings; Generators and air movement units with associated ducting within bare tunnel lining, battery storage rooms formed of masonry, transformer enclosures x4 constructed of single course brick. Ceramic tiles throughout

2nd half furnishings: Bakelite panels and room divides with suspended roof tiles and wooden doors, fitted out with verticle walls to form conventional office space Vynil floor tiles and carpet 50/50

Item	No.	Sum	Ur	nit	Notes / Assumptions		
General							
Floor space area (GIA)		765.6	m	ո2	Total Floor area - approximate based on Matterport surevy		
Tunnel bore height (including concrete floor)		4.1	n	n	Measurement from floor to roof of tunnel bore		
Length of Tunnel		196.3	n	n	Length of tunnel		
Diameter of Tunnel		5.0	n	n	Average width assumed constant throughout tunnel		
Radius of tunnel		2.5	n	n	Width halved		
Floor width		3.9	n	n	floor width within bottom 10th of tunnel bore		
Total internal surface area of tunnel minus floor space area		2382.5	m	ո2	2x πr2 Plus 2πr2xL		
Concrete							
Total concrete floor (in situ quantities pre-processing)	water floor (in situ quantities are processing)	25	1.8		Approximate concrete within base of tunnel bore, not accounting for		
Total concrete noor (in situ quantities pre-processing)		23		13	drainage and or service ducting - assumed removal of 50%		
Area of Dividing Blockwork walls		20	1.2 m	12	25% of South street centre length X height		
Total volume of concrete & brick work partition walls		3	0.2 m	13	Wall thickness measured from matteport survey 0.15		
Total concrete (in situ quantities pre processing)		282.0	m	13	Based on the above assumptions and calculations - Tonnes conversion		
Processed concrete volume (inc bulking factor)		479.4	m	13	factors based on referenced websites and standard guidance (Bulk density		
Concrete tonnes conversation		648.7	Ton	nes	of 2300kg/m3)		
Miscallaneous Office Equipment & Hard furnishings (soft strip malterial)							
Desks / Chairs /Msc fixtures and fittings /Furnitures		2.8	Ton	nes	Estimated value based on 50% South Street Centre fitted out as office space		
Floor Tiles (Assumed ceramic tile)							
Tiled floor space per floor		267.9	m	12	The assumption that 1/3 of the floor space is ceramic tiling (14kg per m2)		
Total Volume of floor Tiles	0.05	13.4	т	13	Thickness assumption based on average thickness of commercial tiles (0.05m)		
Tile tonnes	0.014	3.8	Ton	nes	weight conversion based on referenced websites		
Floor Tiles (Vinyl)							
Tiled floor space per floor		267.9	m	12	Vinyl flooring (Western portion) (2.6kg per m2)		
Total Volume of floor Tiles	0.003	0.8	т	13	Thickness assumption based on average thickness of commercial tiles (0.003m)		
Tile tonnes	0.0026	0.7	Ton	nes	weight conversion based on referenced websites (2.6kg per m2)		
Ceiling Tiles (Mineral Fibre acoustic boards)							
Mineral Fibre Ceiling tiles		1.4	m	12	The assumption that 1/3 of the ceiling is office tiling		
Total Volume of Ceiling Tiles	0.0015	0.0	т	13	Thickness assumption based on average thickness of ceiling tiles (0.0015m)		
Tile tonnes	0.0034	0.0	Ton	nes	Weight conversion based on referenced websites (1m2=3.47kg)		

Carpets							
otal area of carpet		1.4	m2	Assumption that carpet covers 1/3 of the floor space (Office fit out)			
arpet thickness	0.01	0.0	m3				
arpet Tonnes	0.0055	0.0	Tonnes	Online sources show 550g per m2			
Water pipework							
/ater pipework	0.015	201.3	m	length of tunnel plus width in m. based on assumptions. 0.015m based on referenced websites.			
eel Pipework	0.96	3.0	Tonnes	1m steel pipe = 0.0015 tonnes (25mm dia pipe with 2.5mm thick walls)			
Electrical							
/ Electrical cables		785.2	m	Assumed 4 lengths off tunnel for distribution			
olume in m3 for LV Electrical cables	0.04	31.4	m3	Assumption based on referenced websites			
olume in tonnes for LV electrical cables	0.015	0.5	Tonnes				
uorescent Lighting per floor		15.0	No.	Based on assumptions			
otal volume Florescent Lighting		0.0	Tonnes	95g each flourescent tube aprox			
akerlite pannels (Identified in asbestos management survey)							
otal Bakerlite panneling		1786.9	m2	Assumptions from Matterport survey Bakerlite pannel weight = 1250kg / m3 (100% coverage Western half of tunnel/ 50% mid tunnel)			
akerlite panneling m3	0.002	3.6	m3	Bakerlite pannel thickness 2mm			
akerlite panneling tonnes	1.25	4.5	Tonnes				
Doors							
oors		20.0	No.	Assumptions from matterport surevy			
/eight of doors tonnes	0.04	0.8	Tonnes	Weight based on referenced website average 40kg per door - 1m3 = 1000kg			
Ventilation ducting							
uctwork for Air handling units	0	2.9	Tonnes	Approximately 1 lengths of the tunnel (15kg/m)			
Additional Plant							
enerator equipment and AC/DC inverter	1	8.0	Tonnes	8 tonnes for unit Assumption			
V electical transformers	4	11.4	Tonnes	Assumption taken from matterport survey of 2,860kg per unit			
				реготор и достовного под под под под под под под под под по			



South Street Centre

Usage: 1st half Power plant (2 diesel engines) and switchgear with associated transformers and distribution equipment with occasional office room.

2nd half: Offcie rooms with access to 1-4th Avenue, Batteries and Air movement plant

1st half furnishings; diesel engines and bare tunnel lining,

2nd half furnishings: Rooms diveded with Masonry walls and bakelite wall panels on half tunnel

Item	No.	Sum	Unit	Notes / Assumptions			
General							
Floor space area (GIA)		741.0	m2	Total Floor area - approximate based on Matterport surevy			
Tunnel bore height (including concrete floor)		4.1	m	Measurement from floor to roof of tunnel bore			
Length of Tunnel		190.0	m	Length of tunnel			
Diameter of Tunnel		5.0	m	Average width assumed constant throughout tunnel			
Radius of tunnel		2.5	m	Width halved			
Floor width		3.9	m	floor width within bottom 10th of tunnel bore			
Total internal surface area of tunnel minus floor space area		2307.3	m2	2x πr2 Plus 2πr2xL			
Concrete & blockwork tonnes conversation							
Total concrete floor (in situ quantities pre-processing)		244.1		Approximate concrete within base of tunnel bore, not accounting for			
Total concrete moor (in situ quantities pre-processing)		244.1	m3	drainage and or service ducting - assumed removal of 50%			
Area of Dividing Blockwork walls		194.8	m2	25% of South street centre length X height			
Total volume of concrete & brick work partition walls		29.2	m3	Wall thickness measured from matteport survey 0.15			
Total concrete (in situ quantities pre processing)		273.3	m3	Based on the above assumptions and calculations - Tonnes conversion			
Processed concrete volume (inc bulking factor)		464.7	m3	factors based on referenced websites and standard guidance (Bulk density			
Concrete tonnes conversation		628.7	Tonnes	of 2300kg/m3)			
Miscallaneous Office Equipment & Hard furnishings (soft strip malterial)							
Desks / Chairs /Msc fixtures and fittings /Furnitures		2.8	Tonnes	Estimated value based on 50% South Street Centre fitted out as office space			
Floor Tiles (Assumed ceramic tile)	•			·			
Tiled floor space per floor		555.8	m2	The assumption that 2/3 of the floor space is ceramic tiling (14kg per m2)			
Total Volume of floor Tiles	0.05	27.8	m3	Thickness assumption based on average thickness of commercial tiles (0.05m)			
Tile tonnes	0.014	7.8	Tonnes	weight conversion based on referenced websites			
Floor Tiles (Vinyl)							
Tiled floor space per floor		259.4	m2	Vinyl flooring (Western portion) (2.6kg per m2) 3rd of floor space			
Total Volume of floor Tiles	0.003	0.8	m3	Thickness assumption based on average thickness of commercial tiles (0.003m)			
Tile tonnes	0.0026	0.7	Tonnes	weight conversion based on referenced websites (2.6kg per m2)			
Water pipework							
Water pipework	0.015	195.0	m	length of tunnel plus width in m. based on assumptions. 0.015m based on referenced websites.			
Steel Pipework	0.96	2.9	Tonnes	1m steel pipe = 0.0015 tonnes (25mm dia pipe with 2.5mm thick walls)			
Electrical				1			

LV Electrical cables		760.0	l m	Assumed 4 lengths off tunnel for distribution			
Volume in m3 for LV Electrical cables	0.04	30.4		Assumption based on referenced websites			
Volume in tonnes for LV electrical cables	0.015	0.5	Tonnes				
Electrical switchgear and circuit breakers	25	7.5	Tonnes	25 switchgear cabinets - Assumption of 300kg per unit			
Transformers	10	28.0	Tonnes	2 transformers, winding weight unknown from Matterport survey. assume 2,860kg from modern units			
Fluorescent Lighting per floor	50		No.	Based on assumptions			
Total volume Florescent Lighting		0.0	Tonnes	95g each flourescent tube aprox			
Bakerlite pannels (Identified in asbestos management survey)							
Total Bakerlite panneling		807.6	m2	Assumptions from Matterport survey Bakerlite pannel weight = 1250kg / m3 (50% coverage eastern portion of tunnel)			
Bakerlite panneling m3	0.002	1.6	m3	Bakerlite pannel thickness 2mm			
Bakerlite panneling tonnes	1.25	2.0	Tonnes				
Doors							
Doors		16.0	No.	Assumption from matterport survey			
Weight of doors tonnes	0.07	1.1	Tonnes				
Ventilation ducting							
Ductwork for Air handling units		2.9	Tonnes	Approximately 1 lengths of the tunnel (15kg/m)			
Additional Plant							
DC lead batteries 23 cells within 1 rack		0.7		Assumptions from Matterport survey DC battery rack weight aprox 720kg			
Air Handling Unit	1	2.1	Tonnes	weight taken from a modern modular packaged air handling unit (NuAire - NA17-220/130 - 2.13 tonnes per unit)			
2 x Large 6 cylinder Diesel generators		16.0	Tonnes	Assumption from matter port survey as a 6-cylinder Ruston 6APC engine - 8			
Total		18.9	Tonnes	tonnes			