

ALL SERVICE RISK REGISTER SUMMARY

ACTIVITY: STREET LIGHTING LED
UPGRADE MAY 2014 NEW



		INITIAL ASSESSMENT		
Ref	Doc Ref	Hazard & Consequences	Full Cost	All actions to mitigate risk
1		QUALITY		
1.1		Appearance of reinstatement	100,000.00	Ensure method statements and quality procedures are followed
1.2		Appearance of finished product - surface damage / impact damage on delivery	33,885.00	Inspections on delivery - direct reporting of faults
1.3		Handling damage - columns and lanterns	33,885.00	Ensure adequate protection measures / careful handling during transport / distribution and installation
1.4		Stability of columns		Ensure quality procedures followed and industry standards maintained. Allowance for push-pull test?
1.5		Lighting levels achieved	715,254.00	Suggest night-time site visit by Client after early sectional completion to gauge acceptability response. Some completed sections of the network could be used as an example. The scheme is priced on the basis of one-for-one replacements and the comparison of desired lighting outcomes / safety provision has not been incorporated
1.6		Failure rate of LED units	62,920.00	Manufacturer tied to guarantee provision that a nominal amount will be replaced FOC. If this becomes excessive, then manufacturer will also pay compensation of £25 per unit for re-installation costs.
1.7		Power consumption target savings achieved		Allied to 1.5 above. The replacement programme is based upon the current extent of knowledge of the existing asset. If this is erroneous and the profile of each size of lamp changes, then the projected power consumption differential may not be as forecast.
1.8		Dimming unit operating systems - future changes to settings impact on projected power savings		Monitor early in programme and adjust during duration to optimise settings?
2		PROGRAMME		

	Delays in delivery of materials	448,076.00	Ensure programme takes into account full impact of lead-ins and inter-company dependencies - Ensure contract start is fixed in full consideration of availability and lead times. Possibility of bad batch of steel to manufacturer?
2.1			
2.2	Inclement weather delays site operations.	25,000.00	Only high level access works affected by extremely high winds. Close monitoring and logical programming should mitigate the risk
2.3	Breakdown of street lighting unit	-	Suitable maintenance and inspection regime of mechanical equipment in place. Arrange for back-up facilities from third parties if necessary
2.4	Standing time due to accident elsewhere on the network	-	Work programme may be adapted to reduce impact, consider occasions where network congestion affect travel time
2.5	Power supply transfer delays	-	Adequate programming / notice periods to be allowed
2.6	Prolongation of programme due to Non-performance of SC	66,300.00	Adequate monitoring of SC performance weekly against targets. BBLP PM to manage
2.7	Quantity increase creates extension to duration of works		Current programme is based on known quantities
3	<u>HEALTH & SAFETY</u>		
3.1	Manual handling- personal injury. Includes columns, lantern units, cable drums, contractors equipment		Follow safe working practices. Ensure adequate supervision and control. Ensure adequate provision of suitable equipment
3.2	Lifting plans		Ensure industry best practice followed. Risk assessment and Method statements communicated to trained personnel
3.3	Conflicts with vehicles and lifting equipment		Adequate advanced programming and communication to the local communities should mitigate. Local supervision and control by trained personnel
3.4	Hand-held tools		Risk assessment and use of protected tools to reduce vibration. Limit exposure in line with industry guidance
3.5	Live services incl overheads		Follow safe working practices. Ensure adequate supervision and control. Ensure adequate provision of suitable detection equipment and trained personnel.
3.6	Open excavations		Follow safe working practices. Ensure adequate supervision and control. Ensure adequate provision of suitable barriers, or backfill ASAP. Operatives and supervisors trained to NRSWA requirements
3.7	Noise		Consideration of local environment by local supervision (working hours etc.) adequate planning. Establish local protection or consider limiting exposure where poss. Appropriate PPE for personnel

3.8	COSHH		Follow procedures determined by manufacturers recommendations. Appropriate PPE where contact is required
4	THIRD PARTIES		
4.1	Personal injury to public - contact with vehicles.	-	Traffic management in accordance with Chapter 8. All operatives accredited for chapter 8 works.
4.2	Loss/theft of T.M	-	Operatives in vicinity when TM in use.
4.3	Pedestrians walking through or adjacent to works, with possible injury.	-	Appropriate Signing and guarding around works to ensure safety of pedestrians
4.4	Third party collision with Traffic Management; claims from 3rd parties and delays to works.	-	Traffic management in accordance with Chapter 8.
4.5	Possible injury to 3rd parties resulting from operations undertaken within works area.	-	Plant to be fitted with appropriate guarding & safety features
4.6	Management of public perception of change in appearance / location of lamps and lighting levels achieved	-	Media coverage, website interface and provision for advanced comments. Programme management and phasing to be provided by BBLP

5	SITE ENVIRONMENT		
5.1	Parked cars restricting access		Works will be planned and sites noticed to ensure vehicles are not present. Consider events where access equipment impeded by vehicles and traffic adjacent to works
5.2	Loss of time due to deliveries to shops		Works will be planned and measures in place to work with shops to facilitate deliveries with minimal impact on productivity.
5.3	Traffic Management on roads over 40MPH	10,500.00	Vast Majority of columns are in urban areas where speed limit below 40MPH
5.4	Reinstatement in Natural stone paving	33,750.00	No. of columns in natural paving materials unknown, but perceived as very low percentage by local staff
5.5	Service transfers require WPD isolation due to : Deteriorated or damaged cables, damaged cut-outs, damaged or mis-aligned columns, faulty or non-standard service cables, etc.	157,500.00	Full knowledge of network unknown.
5.6	Trees or other vegetation require clearance to site columns	40,500.00	Full details of locations / likelihood unknown. Currently believed to low risk, but a full county-wide survey would be the only certain means of determining extent.
6	Other		
6.1	Project cost escalates due to increases in quantity	476,836.00	Current programme and price is based on known asset data - changes to be HC risk

O1		OPPORTUNITIES	
O1 -1		Quantities decrease	- 238,418.00
O1 -2		Supervision reduction	- 75,046.00
			£ 1,790,942.00

Current programme and price is based on known asset data - changes to be HC risk
Effective Project Management team built into price to drive efficiency and manage programme. If it becomes apparent the scheme will run without it, then the resource could be redeuced offering savings

Likelihood
1 Rare
2 Unlikely
3 Possible
4 Probable
5 Certain

POST MITIGATION

Method of evaluation of Cost Allowance	Severity	Likelihood	IMPACT FACTOR	Outstanding actions
	See Tab 2 - Rating	See Tab 2 - Rating	%	
Adequate supervision to ensure quality product is achieved. BBLP to inspect and sign off	2	2	16%	
Cost should be covered by manufacturer, unless damaged on site. Say 2.5% of 2990 columns = 75No @ Ave £68.00. 1.25% of 8842 Lanterns = 110 @ £261.00 Ave	3	3	36%	
Say 2.5% of 2990 = 75No @ Ave £68.00 1.25% of 8842 Lanterns = 110 @ £261.00 Ave	3	2	24%	Risk now assumed by SC
Adequate supervision to ensure quality product is achieved	2	2	16%	
Adequate supervision / design sign-off to ensure quality product and expected luminescence is achieved. HC to make decision on acceptability and accept risk of change. Allowance for say 15% more lanterns / columns to overcome deficiencies?	3	2	24%	
Say 2.5% of 8842 = 220 @ £286.00 ave.	2	2	16%	
	3	3	36%	
	4	3	48%	

SC to manage with appropriate screening by BBLP supervision	3	2	24%	
N/A	3	2	24%	
N/A	3	2	24%	
N/A	3	3	36%	
			36%	
N/A	3	3		
			36%	
N/A	3	3	36%	
			16%	
	2	2		

Adequate programming of works and information to local residents to mitigate	2	2	16%	
Local teams to manage with communication to locals	2	2	16%	
HC believe as few as 70No affected of the 2990 Columns @ £150.00 per set up	3	3	36%	
Say 45 columns @ 1.5m2 @ 500.00	3	2	24%	
WPD costs @ 525 per conn? Say 10%	4	3	48%	
7.5% of column changes = 225 No @ 180.00 per site incl access / TM	3	3	36%	
CE mechanism - say 10% increase on base scheme costs	3	3	36%	

CE mechanism - 5% of base scheme costs	3	3	36%	
Say 50% of full team allowance	4	3	48%	

Severity	Commercial Effect Rating				
	Negligible	Minor	Moderate	Significant	Catastrophic
1	2	3	4	5	
1	2	3	4	5	
2	4	6	8	10	
3	6	9	12	15	
4	8	12	16	20	
5	10	15	20	25	

1-4 Low , 5-10 manageable, 10 -25 unacceptable
Thus Each point scores 4% Risk Factor

Residual By Supply Chain	Residual Cost for target	Residual Project contingency	Risk Owner
			SC
16,000.00	-	-	
			MAN'RE
12,198.60	-	-	
			SC
8,132.40	-	-	
			SC
-	-	-	
			HC
		171,660.96	
			MAN'RE
10,067.20	-		
			HC
			HC

			BBLP/SC
	-		
			BBLP /SC
	-		
	-		BBLP /SC
			BBLP /SC
	-		
			BBLP /SC
	-		
			BBLP /SC
	-		
			HC
	-		

			BBLP /SC
	-		
			BBLP /SC
	-		
	-	5,250.00	HC
	8,100.00		BBLP
			HC
	-	75,600.00	
	14,580.00		BBLP
	-	171,660.96	HC

	-	85,830.48	HC
			HC
	-	36,022.08	
£ 55,398.20	£ 146,130.24	£ 302,319.36	

Likelihood	Severity	Commercial Effect Rating			
	Negligable	Minor	Moderate	Significant	Catastrophic
	1	2	3	4	5
1 Rare	1	2	3	4	5
2 Unlikely	2	4	6	8	10
3 Possible	3	6	9	12	15
4 Probable	4	8	12	16	20
5 Certain	5	10	15	20	25

1-4 Low , 5-10 manageable, 10-25 unacceptable
Thus Each point scores 4% Risk Factor