

**City of London: Projects Procedure Corporate Risks Register**

**Project name:** *Tower Bridge HV Replacement and Increasing Resilience*

**Unique project identifier:** *11520*

**Total est cost (exc risk)** *£6076293*

*Corporate Risk Matrix score table*

<b>PM's overall risk rating</b>	<b>Medium</b>
<b>Avg risk pre-mitigation</b>	<b>9.0</b>
<b>Avg risk post-mitigation</b>	<b>4.8</b>
<b>Red risks (open)</b>	<b>4</b>
<b>Amber risks (open)</b>	<b>44</b>
<b>Green risks (open)</b>	<b>7</b>

	Minor impact	Serious impact	Major impact	Extreme impact
Likely	4	8	16	32
Possible	3	6	12	24
Unlikely	2	4	8	16
Rare	1	2	4	8

**Costed risks identified (All)**

£10,625,000.00	175%
£10,625,000.00	175%
£2,161,710.00	36%
£2,161,710.00	36%

*Costed risk as % of total estimated cost of project*

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**Costed risk pre-mitigation (open)**

**Costed risk post-mitigation (open)**

**Costed Risk Provision requested**

*CRP as % of total estimated cost of project*

- (1) Compliance/Regulatory
- (2) Financial
- (3) Reputation
- (4) Contractual/Partnership
- (5) H&S/Wellbeing
- (6) Safeguarding
- (7) Innovation
- (8) Technology
- (9) Environmental
- (10) Physical

Number of Open Risks	Avg Score	Costed impact	Red	Amber	Green
11	<b>10.2</b>	£1,670,000.00	0	10	1
2	<b>9.0</b>	£845,000.00	0	2	0
6	<b>8.3</b>	£170,000.00	1	4	1
1	<b>4.0</b>	£150,000.00	0	0	1
2	<b>14.0</b>	£250,000.00	1	1	0
0	<b>0.0</b>	£0.00	0	0	0
0	<b>0.0</b>	£0.00	0	0	0
0	<b>0.0</b>	£0.00	0	0	0
3	<b>8.0</b>	£700,000.00	0	3	0
30	<b>8.7</b>	£5,750,000.00	2	24	4

<b>Issues (open)</b>	<b>0</b>
<b>All Issues</b>	<b>0</b>

<b>Open Issues</b>	0	0	0	0
<b>All Issues</b>	0	0	0	0

Extreme	Major	Serious	Minor
0	0	0	0
0	0	0	0

<b>Cost to resolve all issues (on completion)</b>	£0.00
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<b>Total CRP used to date</b>	£43,290.00
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Project Name:	<b>Tower Bridge HV Replacement and Increasing Resili</b>	PM's overall risk rating:	<b>Medium</b>	CRP requested this gateway:	<b>£ 335,000</b>	Average unmitigated risk score:	<b>9.0</b>	Open Risks:	<b>55</b>
Unique project identifier:	<b>11520</b>	Total estimated cost (exc risk):	<b>£ 6,076,293</b>	Total CRP used to date:	<b>£ 43,290</b>	Average mitigated risk score:	<b>4.8</b>	Closed Risks:	<b>6</b>

General risk classification										Mitigation actions										Ownership & Action				
Risk ID	Gateway	Category	Description of the Risk	Risk Impact Description	Likelihood Classification pre-mitigation	Impact Classification pre-mitigation	Risk score	Costed impact pre-mitigation (£)	Costed Risk Provision requested Y/N	Confidence in the estimation	Mitigating actions	Mitigation cost (£)	Likelihood Classification on post-mitigation	Impact Classification on post-mitigation	Costed impact post-mitigation (£)	Post-Mitigation risk	CRP used to date	Use of CRP	Date raised	Named Departmental Risk Manager/	Risk owner (Named Officer or External Party)	Date Closed OR/ Realised &	Action dependencies	Comment(s)
R1	5	(10) Physical	Terrorism	Terrorist attack affecting site, ability to get to site, affecting planned or completed works. Risk of 4-6 weeks delay, Cost of works, prelims, damage, restarting.	Possible	Extreme	24	£150,000.00	N	D - Very Uncomfortable	Bridge forms part of existing COL counter terrorism policy. Site security requirements to be reviewed during design development. Specific harding requirements to be specified within ITT documents and pricing.	£0.00	Possible	Major	£0.00	12	£0.00		17/08/20		COLC(NB)			
R5	5	(1) Compliance/Regulatory	Reliance on Third Party Statutory Works e.g. UKPN	Time and cost (extension of time claims from contractor and design team )	Possible	Major	12	£150,000.00	N	C - Uncomfortable	Early engagement and submission of application to UKPN by COLC. An early application fee shall be payable, c£100-150k estimated to reserve north shore supply.	£0.00	Possible	Serious	£50,000.00	6	£0.00		17/08/20		COLC(NB) / AECOM(PB)			AECOM shall submit the UKPN application during early RIBA Stage 2. AECOM shall monitor the UKPN application and detailed design process. UKPN quotation received 20.10.2020 allowing early placement of order.
R6	5	(3) Reputation	Disturbance to neighbours during construction works resulting in negative reputation of project and client, increased costs and delays to programme.	Reputation	Possible	Serious	6	£0.00	N	B - Fairly Confident	ensuring that logistics plan and environmental health requirements are met by the contractor. Draft CENP to be request from contractors as part of ITT process / tender.	£0.00	Possible	Serious	£0.00	6	£0.00		17/08/20		COLC(NB) / Contractor(tbc)			
R7	5	(3) Reputation	Disturbance or effect on Business As Usual Activities of Lower Bridge. Potential requirement for temporary ticket office should closure be required to facilitate works.	Revenue impact (est £420K per month)	Possible	Major	12	£0.00	N	B - Fairly Confident	Consider phasing of works during design development. Out of hours working and back up supply's to be considered to avoid BAU interruption.	£0.00	Rare	Major	£0.00	4	£0.00		17/08/20		COLC(NB) / Design Team(PB & DB AECOM/ LPM(SMC)			Design team to develop phasing strategy / sectional completion proposals prior to ITT issue.
R8	5	(9) Environmental	Poor consultant / contractor Team Performance	Time and cost for disputes, delays or replacement of resource	Possible	Serious	6	£600,000.00	Y - for costed impact post-mitigation	C - Uncomfortable	close Team management in place - high quality weighting for tender assessment and KPIs during appointment etc	£0.00	Unlikely	Serious	£50,000.00	4	£0.00		17/08/20		COLC(NB) / CB(JC) / LPM(SMC) / Contractor			Project team to assess most appropriate procurement route during early RIBA Stage 3 via procurement workshop. This will define the most appropriate route to identify a principal contractor.
R9	5	(3) Reputation	Negative Press	Reputation	Possible	Serious	6	£20,000.00	N	B - Fairly Confident	Liaison with TB Marketing/ COL press office ahead of commencement of works.	£0.00	Possible	Minor	£0.00	3	£0.00		17/08/20		COLC(NB)			Press release to be issued to provide sufficient and advanced warning of works. Communications Strategy to be developed with TB & COLC. Potential use of comm consultant if negative press is received due to bridge closure / bus diversions etc.
R10	5	(3) Reputation	Local transport disruption caused by construction traffic	Reputation	Likely	Minor	4	£0.00	N	C - Uncomfortable	highlight traffic management sensitivities to UKPN & TfL on engagement	£0.00	Possible	Minor	£0.00	3	£0.00		17/08/20		COLC(NB)			Refer to Risk 4 above.
R11	5	(10) Physical	Delays during construction - Unable to achieve practical completion as programmed	Time and Cost (consultant TA fees, staff costs)	Possible	Serious	6	£50,000.00	N	C - Uncomfortable	Project management and good supervision of contractor and robust ITT documents / Contract Documentation to be developed at RIBA Stage 4.	£0.00	Possible	Minor	£0.00	3	£0.00		17/08/20		COLC(NB)/ CB(JC) / LPM(SMC)	Oct-20		Risk Closed. Refer to Risk 62
R12	5	(10) Physical	The site presents space constraints for construction, access and logistics.	Site logistics impacting on cost, time and quality of completing the works	Possible	Major	12	£500,000.00	N	C - Uncomfortable	site logistics plan will be developed and included in tender docs. Briefing to project team and Contractor to be clear, with options, access and logistics discussed.	£0.00	Unlikely	Major	£0.00	8	£0.00		17/08/20		COLC(NB)/ Design Team(PB AECOM/ DB AECOM/ Arch(tbc)	Oct-20		Refer to Risk 3 above, implement site survey schedule and identify surveys / information required from early RIBA Stage 2. Design team to develop design based of accurate measured building survey information. Review of boiler mezzanine installation information. Risk Closed. Refer to Risk 62
R13	5	(10) Physical	Unavoidable or un-anticipated bridge activities affecting these works	Time and Cost - extension of time	Likely	Minor	4	£250,000.00	N	C - Uncomfortable	Issue closely with TB team and contractor on programme	£0.00	Possible	Minor	£100,000.00	3	£0.00		17/08/20		COLC(NB) / LPM(SMC) / Contractor(tbc)			
R14	5	(1) Compliance/Regulatory	Delay due to Col. Committee Approval Process	Time and Cost	Possible	Serious	6	£50,000.00	N	C - Uncomfortable	include committee processes into programme. Briefing chairmen on early warnings and issues	£0.00	Unlikely	Minor	£15,000.00	2	£0.00		17/08/20		COLC(NB) / LPM(SMC) / Lead Designer (PB AECOM)			Strategic Programme now agreed with project team and Col. Note that the project programme must be maintained to achieve a 2021 completion date.
R15	5	(1) Compliance/Regulatory	Works could be subject to change further to Statutory requirements. This includes English Heritage etc.	Staff costs, re-design fees and application fees	Possible	Major	12	£150,000.00	N	B - Fairly Confident	Early engagement with Planning Authorities & English Heritage via planning consultant and thorough understanding of any conditions which require discharge	£0.00	Unlikely	Serious	£100,000.00	4	£0.00		17/08/20		COLC(NB) / Planning Consultant(tbc)			
R17	5	(10) Physical	Long Lead on specialist / Material Services not accounted for in contractors programme / not anticipated	Time	Likely	Serious	8	£150,000.00	N	C - Uncomfortable	Early placement of UKPN order prior to Contractor engagement. Refer to Strategic Project Programme.	£0.00	Unlikely	Serious	£25,000.00	4	£0.00		17/08/20		COLC(NB) / Design Team(PB AECOM/ Arch(tbc)/ Contractor(tbc)			It is not proposed for COLC to order specialist equipment as this will form part of the Contractors Construction Contract to de-risk liability and coordination issues. UKPN quotation received 20.10.2020 allowing early placement of order.
R21	5	(10) Physical	Poor existing condition or works / working area	Additional works or remedial works required which were unplanned	Possible	Serious	6	£250,000.00	N	C - Uncomfortable	Early surveys, contractor engagement and site set up	£0.00	Unlikely	Serious	£0.00	4	£0.00		17/08/20		COLC(NB) / Lead Designer (PB AECOM)			Risk allowance allocated under Risk 12 above (survey costs).
R22	5	(5) H&S/Wellbeing	Uncovering of unknown hazardous materials (Lead Paint, Asbestos, any other hazardous material)	Time impact if works stopped, additional cost if further surveys or works required	Likely	Major	16	£100,000.00	N	C - Uncomfortable	Surveys are included in the project strategy and budget	£0.00	possible	Serious	£0.00	6	£0.00		17/08/20		COLC(NB) / Contractor(tbc)			Asbestos R&D to be procured prior to ITT issue. CB to allow asbestos / other removal/remediation costs within PTE.
R23	5	(3) Reputation	Excessive or Unclear Insurance Requirements	Additional Cost or self insured route required	Likely	Major	16	£150,000.00	N	C - Uncomfortable	Consultation with Insurance Team required ahead of surveys and contractor appointment	£0.00	possible	Serious	£0.00	6	£0.00		17/08/20		COLC(NB) / Contractor(tbc)			
R24	5	(10) Physical	Existing equipment expires before project completed	Poor condition of existing infrastructure not lasting until project completion this may impact completion for this project	Possible	Major	12	£300,000.00	N	C - Uncomfortable	Failure of existing equipment prior to PC of the HV upgrade project. A generator plug-in point is also included in the scope of works as a back up power supply	£0.00	possible	Serious	£200,000.00	6	£0.00		17/08/20		COLC(NB)			Existing south shore HV supply to be renewed as part of project and be used as secondary HV back-up supply upon project PC.
R26	5	(10) Physical	Services to neighbouring sites disrupted during construction.	Time	Possible	Serious	6	£250,000.00	N	C - Uncomfortable	Phasing of the works, timescales and costs to be considered to allow for transition. Inform Contractor of no downtime to existing services to neighbouring sites.	£0.00	Unlikely	Serious	£0.00	4	£0.00		17/08/20		Contractor(tbc)			

R28	5	(2) Financial	Estimated high level costs only allowed for. Actual costs may be more	Cost Increase	Possible	Serious	6	£300,000.00	N	C – Uncomfortable	design information to be closely monitored by QS based upon benchmarking information. Cost plan information to be closely monitored to determine and define procurement route.	£0.00	Possible	Serious	£0.00	6	£0.00	17/08/20	COLC(NB) / CB(JC) / LPM(SMC)		
R29	5	(10) Physical	Site Conditions unsuitable for new UKPN supply / sub-station	Cost and time	Possible	Serious	6	£300,000.00	N	C – Uncomfortable	undertake site identification surveys early in RIBA Stage 2/3&4 and complete site visits with UKPN during design stage. Site surveys already included in project plan	£0.00	Possible	serious	£0.00	6	£0.00	17/08/20	COLC(NB) / Lead Designer (PB AECOM)		Sub-Station sizing to be determined by UKPN during 12wk UKPN design phase.
R33	5	(1) Compliance/Regulatory	Completing works in line with legal bridge lifting constraints	Breach of condition. Possible cost and time if affects planned Contractors contract works - extension of time claims	Possible	Major	12	£250,000.00	N	C – Uncomfortable	ensure that contractors are aware of the need to work around Bridge lifts. Set out agreement ahead of construction to agree how these are dealt with in terms of programme and costs	£0.00	possible	serious	£25,000.00	6	£0.00	17/08/20	COLC(NB)		Temporary generator to be installed as part of works, currently under RIBA Stage 3 development.
R34	5	(5) H&S/Wellbeing	Working around public and tourists	Impact on completing works and associated costs	possible	Major	12	£150,000.00	N	D – Very Uncomfortable	Ensure that sensitivities are included in the tender pack for contractors, ensure that contractor, appointment of PD during the project to ensure H&S considerations are taken into account and implemented. This is included in the project plan	£0.00	possible	serious	£0.00	6	£0.00	17/08/20	COLC(NB) / Contractor(tbc)		Specific hoarding requirements to be identified within ITT Documents. Hoarding and security costs allowed for within Cost Plan.
R35	5	(10) Physical	Revised management / restricted visitor numbers if fire routes amended	This may affect ticket sales, ability to let out venue, require training on different emergency procedures	Possible	Serious	6	£150,000.00	N	C – Uncomfortable	The logistics and fire strategy will be considered in the design stages and worked through with the contractor which should mean that any impact on existing fire strategies will not impact BAU	£0.00	Unlikely	serious	£0.00	4	£0.00	17/08/20	COLC(NB) / Lead Designer(PB AECOM) / Fire Eng(AECOM)		Project Team to develop phasing strategy to avoid restrictions. Fire Consultant to review phasing proposals throughout design development.
R37	5	(10) Physical	Valid Extension of Time request from Contractor	Cost	Possible	Serious	6	£150,000.00	N	C – Uncomfortable	continue to assess risks and buildability during development of design to ensure that issues are addressed prior to construction as far as possible	£0.00	possible	serious	£50,000.00	6	£0.00	17/08/20	COLC(NB) / LPM(SMC)		Implement robust contract administration.
R39	5	(10) Physical	BREXIT: market uncertainty, increased goods costs and labour shortages.	Cost & Time	Likely	Serious	8	£150,000.00	N	C – Uncomfortable	Use Consultant team benchmarking & contractor knowledge to mitigate	£0.00	Likely	serious	£100,000.00	8	£0.00	17/08/20	COLC(NB) / CB(JC)		Current market conditions show strong competition. BREXIT conditions remain uncertain.
R41	5	(10) Physical	Archaeological finds	Cost & Time	Possible	Major	12	£250,000.00	N	D – Very Uncomfortable	Desktop study to be considered by planning and heritage consultant and contingency amount held. Cost of surveys included in the project	£0.00	Unlikely	serious	£35,000.00	4	£0.00	17/08/20	COLC(NB) / Architect (Pellings)		Heritage & Planning consultant to engage with LPA's. Pre-Application processes to be implemented.
R44	5	(10) Physical	Contamination	Time and Cost	Possible	Serious	6	£300,000.00	N	C – Uncomfortable	Surveys to be undertaken as part of project plan	£0.00	Unlikely	serious	£50,000.00	4	£0.00	17/08/20	COLC(NB) / LPM(SMC)		Refer to Risk 22 & 62.
R45	5	(9) Environmental	Ecological site constraints	Legal, reputational, cost and time	Possible	Serious	6	£50,000.00	N	C – Uncomfortable	Ecological surveys to be determined if required as part of planning pre-app process.	£0.00	Unlikely	Serious	£10,000.00	4	£0.00	17/08/20	COLC(NB) / AECOM(PB)		Planning consultant to engage with LPA's. Pre-Application processes to be implemented.
R46	5	(10) Physical	Site Constraints - additional costs for provision of Contractors space and welfare	City must allow to provide for contractors facilities under CDM 2015 Regs but may not be able to given the site constraints	Possible	Major	12	£150,000.00	N	C – Uncomfortable	Welfare site location will be considered as part of the design development for tender documentation	£0.00	possible	serious	£25,000.00	6	£0.00	17/08/20	COLC(NB) / CB (DS) / AECOM (PB)		Additional welfare locations to be considered during RIBA Stage 3 & 4.
R48	5	(2) Financial	Project exceeding budget	Cost	Possible	Major	12	£500,000.00	N	D – Very Uncomfortable	Pre-tender estimate and QS feedback throughout the design.	£0.00	possible	serious	£0.00	6	£0.00	17/08/20	COLC(NB) / QS(JC)		
R49	5	(4) Contractual/Partnership	Contractual disputes/ team disagreements	Cost and Time	Unlikely	Serious	4	£150,000.00	N		Clear lines of communication, RACI put in place as part of project plan	£0.00	rare	Serious	£0.00	2	£0.00	17/08/20	COLC(NB) / LPM(SMC) / Project Team(All)		
R50	5	(10) Physical	Inclement weather construction	Adverse weather affecting works being able to go ahead / completed	Possible	Serious	6	£25,000.00	N	C – Uncomfortable	No mitigation actions can be taken. Provision requested if event occurs	£0.00	rare	minor	£0.00	1	£0.00	17/08/20	COLC(NB)		
R51	5	(10) Physical	Other projects impacting this project	Time and Cost	Possible	Major	12	£50,000.00	N	C – Uncomfortable	Review of works programme to be undertaken including planned maintenance	£0.00	rare	minor	£0.00	1	£0.00	17/08/20	COLC(NB) / LPM(SMC) / Lead Designer(PB AECOM) / Arch(Pellings)		Maintain close dialogue with TB Team.
R52	5	(10) Physical	Damage to Bridge during works by contractor	Cost and Quality	Possible	Serious	6	£0.00	N	D – Very Uncomfortable	Listed Building: Grade 1 - Contractors / Survey Contractors need be made aware. Cost would be to contractor	£0.00	Unlikely	serious	£0.00	4	£0.00	17/08/20	Contractor(tbc)		Contractor RAMS to be obtained prior to starting works. All RAMS to be shared with TB Team & PInD for H&S.
R53	5	(10) Physical	Unforeseen technical problems during installation	Problems with fixings / fittings / infrastructure	Possible	Major	12	£50,000.00	N	C – Uncomfortable	Pre-survey and maintain contingency.	£0.00	unlikely	Major	£0.00	8	£0.00	17/08/20	COLC(NB) / CB (DS) / LPM(SMC) / Lead Designer(PB) / Contractor(tbc)		
R54	5	(10) Physical	Additional Requirements for working in live environment	Cost	Possible	Serious	6	£50,000.00	N	C – Uncomfortable	Security requirements and any other additional requirements to be advised.	£0.00	unlikely	Serious	£0.00	4	£0.00	17/08/20	COLC(NB)		
R55	5	(10) Physical	Current infrastructure feeds river traffic lights and CCTV feed disrupted	reputational - CCTV impact, river traffic chaos	Possible	Major	12	£0.00	N	C – Uncomfortable	Surveys of exact infrastructure to be known and liaison with parties undertaken	£0.00	Unlikely	major	£0.00	8	£0.00	17/08/20	COLC(NB) / LPM(SMC) / Lead Designer(PB) / Contractor(tbc)		Track and trace survey to be instructed during RIBA Stage 3.
R56	5	(10) Physical	Sporting Events	Time	Likely	Minor	4	£0.00	N	C – Uncomfortable	Sporting events (World Cup, Wimbledon, Rugby) disrupting work on site	£0.00	possible	minor	£0.00	3	£0.00	17/08/20	COLC(NB)		Early engagement with TB Teams & GLA to understand potential events
R57	5	(1) Compliance/Regulatory	Requirement for replacement of existing LV cables which require reconnection should they not pass certification prior to being connected to new HV	Time & cost	Likely	Serious	8	£50,000.00	N	C – Uncomfortable	PPM works and funding may be required to undertake remedial works to existing LV. No proposal to upgrade outgoing LV cables.	£0.00	Unlikely	Serious	£5,000.00	4	£0.00	17/08/20	COLC(NB) / LPM(SMC) / Lead Designer(PB) / Contractor(tbc)	Oct-20	PPM works not part of project scope. Risk Closed.
R58	5	(1) Compliance/Regulatory	UKPN works delayed	delay the project programme, resulting in incurring extension of time	Possible	Major	12	£60,000.00	N	C – Uncomfortable	early engagement and order placed prior to contractor appointment	£0.00	possible	serious	£30,000.00	6	£0.00	17/08/20	COLC(NB) / Lead Designer(PB)		Temporary generator to be provided as back-up. Currently allowed for within RIBA Stage 2 Cost Plan.
R59	5	(1) Compliance/Regulatory	Contractors works delay UKPN works/ connection work	delay the project programme, resulting in incurring extension of time	Possible	Major	12	£60,000.00	N	C – Uncomfortable	engagement to be maintained with contractor and order placed prior to contractor appointment	£0.00	possible	serious	£0.00	6	£0.00	17/08/20	Contractor(tbc)		UKPN and pre-con / construction programme closely managed.
R60	5	(10) Physical	Time delay due to Bridge House Estates/ Col. do not agree to transfer freehold/ come to a legal agreement for the new substation land	Programme delay and costs for design team on hold/ additional design work and extensions of time. Additional staff costs	Possible	Major	12	£250,000.00	N	C – Uncomfortable	Engage with Col legal team to undertake work to resolve land ownership with UKPN.	£0.00	possible	Serious	£5,000.00	6	£0.00	17/08/20	COLC(NB)		
R61	5	(10) Physical	capacity / routes of existing cable routes is not sufficient for routing new HV cables prior to removing existing	re-design costs and unforeseen works costs. Programme delays	Likely	Major	16	£300,000.00	N	C – Uncomfortable	Survey and enabling works to ascertain whether there is capacity for existing routes for new HV and LV cables as proposed. Included in project plan	£0.00	possible	Major	£50,000.00	12	£0.00	17/08/20	COLC(NB) / Lead Designer(PB) / Planning Consultant(tbc)		If existing service routes are not suffice following survey information, alternative routes will require investigation and development with engagement with the planning & heritage consultants.