

Hull UK City of Culture 2017 - Project Zephyr Risk Register

Project Title Project Zephyr
Arup Project Ref Code 249697
Version No. Revision 0
Author Name Javed Hussain, Arup

Ref	Risk Name	Risk Description	Impacts	Risk Rating			Mitigation Measures	Risk Owner	Notes
				Probability	Impact	Total			
				1 - 5	1 - 5	12+ 9 - 11 1 - 8			
	Delay to Queen Victoria Square Public Realm Works	Public realm improvements to Queen Victoria Square not completed in time. Potential conflict with Blade supports. Poor PR image for Hull	Physical difficulties in installing blade. Negative PR	3	5	15	Engage with Public Realm works Contractor and monitor programme to ensure completion of works. Propose "Plan B" location for the Blade with reduced risk of conflict.	Hull 2017	See Arup drawing 249697-SK-001 for preferred and alternative blade installation locations.
	Public interfere with blade during installation/removal	Queen Victoria Square not closed off to the public in time to accept delivery of blade. Public get in the way of installation/removal. Crowds are attracted to see operation.	Potential Health & Safety Risks. Delays to installation process	4	3	12	Recruit wardens (or similar) to help manage public. Use fencing / barriers to clearly cordon on working area & remove public. Do not advertise installation/removal process. Installation / removal to occur during quiet periods (e.g. early Sunday morning)	Hull 2017	
	Damage to Public Realm	Damage is caused to public realm during installation / removal of blade and/or by supports. Damage apparent as cracked pavements, settlement etc.	Additional costs. PR impact - public realm has only recently been completed	4	3	12	Ensure that loading on surface is less than design loading (i.e. spread loads from cranes, supports etc.). Place protection materials (geotextiles, timbers etc.) between foundation pads & new surface. Undertake photographic survey before and after installation, Repair damage following removal of blade and supports.	Hull 2017	
	Budget exceeded	The costs for the project are in excess of Hull 2017's budget.	The project might have to be abandoned or additional funding made available	2	5	10	Develop a cost plan and update it at regular intervals. Include a contingency allowance to cover uncertainty in pricing	Hull 2017	
	Political objectors	Politicians object to the project. Politicians try to block scheme (e.g. refuse planning permission) and/or attack scheme in Media	Public Relations damage	2	5	10	Set out an Engagement Plan to inform political leaders of project and gather support. Implement in good time so that there are few surprises	Hull 2017	There is a desire to keep the project secret so that it creates a "surprise". The Engagement Plan should identify how much information can be communicated
	Planning consent is not granted	Planning consent is refused for the blade	Project cannot be realised	2	5	10	Engage with planners at early stage to understand and address potential issues. Engage with Chair of Planning Committee.	Hull 2017	An alternative option to install the blade under temporary powers (<28 days) is being considered
	Fire	Vandals could seek to set blade on fire. If set alight, resin would create a major chemical fire.	Major health & safety impact. Damage to blade. Damage to public realm	2	5	10	Provide security presence to deter vandals & use CCTV to monitor. Engage with Fire Service to assess risk. Consider use of specialist intumescent paints in areas accessible by people.	Hull 2017	
	People collision with blade	People will be encouraged to walk under blade. Potential for people to hit their heads when walking below blade	Health and Safety risk	5	2	10	Install physical barrier (e.g. a bench) to prevent people walking under lowest part of blade (i.e. where headroom is <2.2m)	Hull 2017	Consider if we want to encourage people to touch blade or not.
	High winds during installation & removal	High winds during installation / removal blow blade and make craning and transport unsafe	Damage to blade. Health & safety risks. Delay to installation / removal	3	3	9	In Method Statement identify safe wind speeds for transport and lifting operations. Monitor weather forecasts. Check wind speeds on day. Be prepared to delay transport movements if too windy	ALE	
	Planning consent delayed	More time required for planners to consult with statutory authorities & respond to comments. Planning application not determined within 8 weeks	Delay to implementing project	3	3	9	Engage with all statutory consultees as part of the pre-application process. Undertake pre-application consultation to solicit views and, in application, demonstrate how these views have been taken into account.	Hull 2017	
	Legal Enforcement Action	Blade installed under delegated powers (temporary installation <28 days). Legal objection raised that Hull 2017 always meant to install the blade for >28 days.	Potential legal action from Hull City Council to remove blade. Poor PR	3	3	9	Engage with Planners to agree strategy. Engage with Chair of Committee & gain political support. Submit planning application towards end of 28 day period	Hull 2017	A Temporary Consent route would avoid putting information into the public domain prior to installing the blade. Route may not be strictly in conformance with planning regulations
	Temporary Planning Consent	Planners do not accept temporary planning consent route (<28 days).	Only install blade for less than 28 days or run risk of legal action	3	3	9	Engage with Planners. Plan to submit full planning application. Be prepared to manage PR around potential enforcement action	Hull 2017	
	Surprise element	Planners require Hull 2017 to submit planning application. Media and others publicise images before blade is installed. People comment & some criticise.	Reduced Media Impact. Poor PR	3	3	9	Engage with planners to see if temporary planning route would be acceptable. Carefully control information (particularly visual information) about the sculpture and who its sent to.	Hull 2017	Hull 2017 wish for the installation of the blade to be a surprise.
	New Year's Eve	Ambition to install Blade during early hours of January 1st - some workers may have been drinking previous night. Some workers may not turn up on day. Some members of public likely to be drunk.	Health and Safety Impact	3	3	9	Address issue with workforce in team briefing before installation. Use breathalyser to check for alcohol. Ensure sufficient resources are employed to cover for risk that an employee may not turn up and to help manage public	Hull 2017	
	Climbing	People (e.g. University Climbing Club) attempt to climb onto blade and or climb up supports. People slip off and are injured	Health and Safety risk to general public. Damage to blade	3	3	9	Install "No climbing" sign. Provide physical security presence as deterrent. Use CCTV cameras to monitor activity around blade. Install anti-climb paint on supports. Use "clam shell" concept to close up supports and create physical barrier during "closed periods" (e.g. night-time)	Hull 2017	Blade is 4m diameter at root end - will be difficult to climb. Blade designed to support people during maintenance - Siemens verbally confirmed blade will be strong enough to support people loads
	Straps securing blade	Over time, straps securing blade to the supports may relax. Blade not held firmly and may start to move	Damage to blade. Health & safety risks	3	3	9	Implement checking regime to check that blade is held firmly - e.g.. taughtness of straps and tension in bolts. Tighten if necessary	Hull 2017	
	Objection from General Public	General public object to proposals - possible grounds include aesthetics, impact on retail, "waste of money" etc.	Objections to planning application	4	2	8	Carefully consider protocols for the release of information, including as part of the Planning application submission.	Hull 2017	
	Planning committee meeting delayed	Targeted committee meeting missed (for example there is already too much on the agenda). Decision date deferred	Delay to implementing project	2	4	8	Agree a target committee meeting with planners. Give members a pre-application presentation of the scheme to gather views. Work with planners to ensure all issues addressed	Hull 2017	
	Fit with supports	Blade does not fit in supports.	Potential damage to blade & instability of structure. Health & Safety Risks	2	4	8	Undertake "mock up" at Siemens Yard to check that supports and blade fit. Identify and correct any issues prior to main installation operation.	Hull 2017	

Funding delayed	Funding for the project is not available - there is a delay in being able to pay bills	Potential delay to project	2	3	6	Consider alternative funding sources and impact on overall programme.	Hull 2017	
Parked vehicles cause obstruction	Obstruction caused by vehicles parked on route.	Time	3	2	6	ALE to arrange for vehicle to drive up ahead and clear route. Police assistance may be required to remove vehicle.	ALE	
Removal of street furniture	Affected street furniture is not removed in time and/or is more difficult to remove. Blade transport is delayed	Delay to installation process	3	2	6	Undertake enabling works to install all affected street furniture in sockets so they can be easily removed during transport. Have sufficient labour on site to address any difficulties encountered.	Hull 2017	
Conflict with January Sales / Easter events	Increased shoppers expected during times when blade is installed / removed. People could start queuing from early hours	Health & Safety risks	3	2	6	Plan installation / removal process to avoid periods of high retail activity. Ensure sufficient wardens (or similar) present to manage public during installation & removal processes	Hull 2017	
Delays in design & planning	Deadlines / targets are not met which leads to programme slippages	Potential delay to installation	3	2	6	Develop detailed programme and regularly monitor to identify whether works on track. Appoint Project Manager to monitor progress and proactively address issues.	Hull 2017	
Graffiti	Blade is graffitied whilst on display. Siemens require blade to be returned in original condition	Visual appearance. Cost to remove graffiti	3	2	6	Allow budget to repaint blade from time to time. Provide on-site security presence to deter graffiti artists. Consider using anti-graffiti paint	Hull 2017	Allow costs for use of cherry picker and team to repaint blade if graffitied
Vehicle collision with supports	Vehicles (e.g. street sweepers, service vehicles etc.) collide with support structures	Damage to blade / supports	3	2	6	Locate supports carefully to provide sufficient clearance for vehicles to move around. Consider painting/appearance of supports to make them visible.	Hull 2017	
High winds during operation	High winds during operation create significant forces on structure. Support structures are heavily loaded. Blade "flaps" excessively in wind.	Damage to blade. Damage to public realm if supports move.	3	2	6	Design supports to resist high wind loads. Check assumptions with Siemens.	Hull 2017	Blade is designed to withstand far higher wind loads (i.e. North Sea) than are experienced in the city centre.
Blind people - DDA compliance	Blind people may walk into blade. Need to ensure installation is DDA compliant	Not compliant with DDA regs. Poor PR. Health & Safety risks	2	3	6	Install physical barrier (e.g. bench) & tactiles/edge to warn blind people that they are approaching an obstacle	Hull 2017	
Transport Route	A suitable transport route cannot be identified.	Project cannot be realised	1	5	5	Consider alternative modes of transport.	Siemens	Initial surveys have been undertaken and feasible transport route identified
Supply of Blade	Loan Agreement with Siemens is not in place.	Project cannot be realised	1	5	5	Siemens to confirm offer by end of June 2017.	Siemens	Siemens & HCC are well progressed with Sponsorship Contract Discussions. Loan Agreement discussions to be commenced
Blade from Denmark	Blade cannot be transported from Denmark to UK in time.	Delay to realising project.	1	5	5	Track blade delivery date - put milestone on programme	Siemens	
Blade damaged during transport	Blade becomes damaged during transport - e.g. collision, dropped during lifting	Damage to blade. Potential impact on Loan Agreement	1	5	5	ALE appointed to transport blade. Ensure method statement are written prior to transport - method statement to be reviewed by team. ALE & Hull 2017 to carry sufficient insurances	ALE	
Buses below blade	Bus operators object to proposals to position the Blade above Carr Lane. Fear of collision with buses	Potential objection to planning application. Poor PR	2	2	4	Set out and confirm highway clearances as part of Planning application submission. Engage with Bus operators to explain how design proposals do not impact on bus operations.	Hull 2017	
Secretary of State Call In	Planning Application is called in by Inspector / Secretary of State	Delay to implementing project	1	4	4	Undertake full consultation and work to address concerns of potential objectors. Explain the aims of the Hull UK City of Culture programme.	Hull 2017	
Judicial Review	Objectors object to scheme and mount Judicial Review	Delay to implementing project. Additional costs to defend JR	1	4	4	Abort project if planning application is refused or JR is mounted	Hull 2017	A JR process would take more than 3 months.
Blade supports obstruct manholes/chambers	Access to manholes and chambers to underground are blocked by blade supports - objections from Utility Companies	Physical obstruction created	2	2	4	Carefully position supports to avoid impacting manholes, inspection chambers etc.	Hull 2017	
Breakdown during transport	Transport vehicle(s) breakdown en route. Potential to cause congestion due to extended road closure.	Delay to installation process	1	4	4	Check vehicles are properly maintained. Check vehicles one week before installation date.	ALE	
Conflict with other Events	Installation / removal of blade clashes with other events in Hull City Centre, i.e. Hull 2017 Launch event. Blade prevents other events in Queen Victoria Square taking place	Relationships with other organisations potentially impaired	2	2	4	Hull 2017 to engage with HCC Events Team to coordinate events and minimise potential for conflict.	Hull 2017	
Emergency Services	Blade causes an obstruction to emergency services accessing Queen Victoria Square.	Health & Safety	2	2	4	Engage with emergency services during Planning to understand their requirements. Track vehicles to ensure emergency access to Queen Victoria Square can be maintained at all times.	Hull 2017	
Birds and bird droppings	Birds sit on blade. Birds defecate on blade which is unsightly	Unightly image	4	1	4	Allow budget to clean blade with cleaners working from cherry picker	Hull 2017	Blade surface very smooth - difficult for birds to land, especially if blade is installed at an angle.
Lighting strike	Lighting strikes blade	Damage to blade. Health and safety risk	2	2	4	Position blade so that it is lower than surrounding buildings	Hull 2017	Blade has an in-built lighting conductor.
Static electricity	Movement of blade could generate build up of static electricity	Risk of electric shock	2	2	4	Ensure that blade is earthed via supports	Hull 2017	
Police escort delayed / not available	Police escort does not arrive on time and therefore transport of the blade is delayed.	Delay to installation process	1	3	3	Engage with Police prior to installation date. Hold regular meetings to make sure police are fully engaged with project. Try to get names & meet officers who will be involved in project	Hull 2017	

Road signage	Incidents and road safety issues arise as a result of the temporary removal of regulatory and information signs.	Increased risk of accidents	1	3	3	Make sure that all signs removed are reinstalled after blade has moved through affected area. Take photographic survey before/after to confirm. Address as part of Quality Control procedures.	Hull 2017	
Congestion	Rolling road closures during transport of blade causes significant traffic disruption on A63 and local highway network.	Public Relations	3	1	3	Engage with HCC and Highways England operations early to understand constraints and gain their support to proposals. Move blade during periods of low traffic flows (e.g. early Sunday morning, night-time etc.)	Hull 2017	
Support Structures in Queen Victoria Square	Support structure not assembled/ready in time to accept blade.	Delay to installation process	1	2	2	Undertake "Mock Up" at Siemens Yard to practice assembly of supports. Use lessons learnt to develop Programme for the real installation process. Plan float to avoid any delays impacting on overall installation	Hull 2017	
Damage to Third Party Property	Private property is damaged during delivery of blade.	Additional costs	1	2	2	Track routes to avoid blade over sailing private property. Consider organising photographic survey before and after blade installation/removal	Hull 2017	
Projectiles	People try to "shoot" blade (e.g. with air rifle) or throw objects at blade	Damage to blade	2	1	2	Security presence to deter vandals. Use CCTV surveillance	Hull 2017	Siemens have confirmed that blade is constructed of thick resin and fairly resistant to impact.
Blade Root	Root of blade is hollow. People could access into the blade	Health & Safety risk	2	1	2	Board up end of blade with plywood or similar to prevent access	Hull 2017	
Planning submission delayed	Planning Application not registered - further information required by planners	Delay to implementing project	1	1	1	Agree requirements for planning application submission with Planners as part of Pre-application process.	Hull 2017	
Damage to Highway Infrastructure	Highway infrastructure damaged during delivery/removal of blade.	Additional costs	1	1	1	Undertake enabling works to put infrastructure in sockets to facilitate easy removal & reinstallation. Highway Authority asset managers (or representatives) to be available to assess damage and mitigate impact.	Hull 2017	
Insurances	Insurances do not cover risks of damage to blade, third party damage and/or members of public	Additional costs to fight claims	1	1	1	Hull 2017 to confirm insurances in place prior to mobilisation. Hull 2017 to engage with insurance companies to check that they are covered - share this Risk Assessment with insurers.	Hull 2017	
Litter	Litter collects under supports.	Unightly. Potential fire risk	1	1	1	Implement cleaning regime - liaise with Hull City Council Streetscene	Hull 2017	
Flood Risk	Blade creates barrier to surface water movement - dam effect. Hull is flooded and blade floats	Flooding of adjacent properties. Damage to blade.	1	1	1	Blade is position above the ground - will not create a dam effect and will be above any flood waters. Blade will be firmly attached to supports	Hull 2017	