Health, Safety and Wellbeing
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General Risk Assessment

Risk Assessment Name:	Scatter
Describe task you are undertaking:	A public art installation as part of Curiocity
Who is the Risk Approver?	[redacted]
Date of Risk Assessment:	14 March 2019
Who is the Risk Owner?	Griffith University
Who are the members of the Assessment Team?	John Ferguson, Paul Bardini, Erik Griswold, Danny-Della Bosca
Have you referenced any documents?	No
Do you have any attachments that are relevant to this risk assessment?	Certifications from engineers are attached.

Procedure for completing your risk assessment

1. Identify hazard	The hazard is the source of harm, e.g. luggage. Use the Hazard Identification table at the end of this document to assist you.
2. Describe your risk	The risk is what could happen as a result of the hazard, e.g. back strain from lifting luggage.
3. Assess risk	Existing controls – what do you currently have in place to lessen the level of risk. Use the risk matrix to assess the level of risk, considering these existing controls.
4. Risk Control measure	What further control measures will you put in place to minimise the risk. Think of both short term and long term control measures. Assign a person responsible to implement these controls and a due date for their completion. Given these further control measures what will be the new risk rating. Use the risk matrix to re-assess the level.

The Hierarchy of Control

Eliminate the risk, or if this not reasonably practicable, control the risk to the fullest extent possible by using the following hierarchy of controls:

1. Elimination – remove the hazard. Change the activity or stop using it, e.g. do not travel to a Department of Foreign Affairs and Trade (DFAT) 4 country.
2. Substitution – replace the activity, material or equipment with a less hazard one, e.g. substitute a manual task for an automated task.
3. Isolation – isolate the hazard from the person at risk, e.g. separate pedestrian access from vehicular access.
4. Engineering – Use guarding on equipment in workshops.
5. Administrative Controls – Training, Standard Operating Procedures and completing a Risk Assessment.
6. Personal Protective Equipment (PPE) – Use appropriate and proper fitting equipment, e.g. safety goggles, gloves and lab coats. PPE is to be used in conjunction with other control measures.

Practicable – Consider

When completing a risk assessment the following must be considered in the priority of order of Number 1 – 4:

1. Severity of hazard or risk;
2. Knowledge of hazard or risk and ways of removing it;
3. Availability and suitability of ways to remove or mitigate risk;
4. Cost of removing or mitigating hazard or risk.

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Risk Matrix

Risk Rating

Consequences/ Likelihood	Insignificant No injuries*	Minor First Aid treatment*	Moderate Medical treatment*	Major Serious or extensive injuries*	Catastrophic Death or large number of serious injuries*
Almost Certain	**Low**	**Medium**	**High**	**High**	**Extreme**
Likely	**Low**	**Medium**	**Medium**	**High**	**High**
Possible	**Low**	**Low**	**Medium**	**Medium**	**High**
Unlikely	**Low**	**Low**	**Low**	**Medium**	**Medium**
Rare	**Low**	**Low**	**Low**	**Low**	**Medium**

Likelihood Rating

The number of times within a specified period in which a risk may occur either as a consequence of business operations or through failure of operating systems, policies or procedures.

Rating	Description	Occurrence	Probability
Almost Certain	**Expected to occur in most circumstances**	**Multiple/12 months**	**> 80%**
Likely	**Strong possibility of occurrence**	**Within 12 months**	**61% – 80%**
Possible	**May occur occasionally**	**Within 5 years**	**31% – 60%**
Unlikely	**Not expected to occur but may happen**	**Within 10 years**	**5% – 30%**
Rare	**May only occur in exceptional circumstances**	**>10 years**	**< 5%**

Prioritising Risks – Table of Management Action

Risk Score	What should I do?
Extreme	Immediate action required
High	Action plan required, senior management attention needed
Medium	Specific monitoring or procedures required, management responsibility must be specified
Low	Manage through routine procedures. Unlikely to need specific application of resources.

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Identify, assess and control your risks

IDENTIFY		ASSESS		CONTROL			
Risk Factor/Hazard	Describe your risk	What are your existing controls?	What is the current risk rating?	To further reduce risk what proposed controls have you considered?	Who is responsible for these controls?	Due date	What is the residual risk rating?
Structural integrity of the sculptures	Sculptures could fall over, causing injury or damage.	The sculptures have been stabilized in three ways: 1. They are constructed from tri-truss, a very strong and load certified product commonly used in events 2. The base of the structure is stabilized with at least 500 kilo concrete blocks, as recommended by the structural engineer. 3. Each structure is further stabilized through the use of scaffolding outriggers. The structure has been certified by an engineer (certification attached).	Low	We have implemented all safety measures that the consulting engineer has asked for.	The control measures have been implemented by the fabrication and installation team		The residual risk is negligible as the structures have been engineer certified and exhaustively tested in the workshop and on location
Structural integrity of the spinning rotor & speaker assemblies	The spinning rotor or speaker assemblies could fail, potentially freeing components from the structure. Components could	The rotor assemblies have been exhaustively tested through many hours of operation in controlled conditions. Assemblies have been tested in the workshop and in an	Low	Further control measures include rigourous daily inspections of the structure and associated components before system start up each day, namely the positions	JLX	Daily	The residual risk rating is negligible

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	fall and pose damage to audience members.	external location prior to installation at Southbank. Testing of rotor assemblies has involved extensive hours of use and observation over intended speeds and over intended rotational weight. The fabrication of rotor and speaker assemblies has been carried out by skilled fabricators using appropriately specified metals, stock and bearings. All welding has been carried out in accordance with AS/NZS 1554.1:2014. The 12 volt motors and gearboxes used are operating well within intended speed and load The spinning rotor and speaker assembly have been secured in the following ways: 1. Wherever possible, locknuts have been used and threads checked for proper assembly. 2. Any internal nuts have been installed with threadlock to prevent loosening, from		of nylock nuts and safety shackles. Inspection of the structures will include assessment of component positions pre and post installation which are verified by photographic documentation.			

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		movement and vibration. 3. Tensioned elements of the rotational assemblies and installation of the speaker assemblies all use rated stainless steel cable and swages. 4. Reduncy measures have been built in to the rotational structure, including extra horizontal stays and safety cables attached form the rotational assembly to the speaker enclosures. 5. The speaker enclosures have been deigned and constructed using multiple redundant components. All of the componentry is 316 stainless steel and rated well in excess of the intended load and rotational speed.					
Wind Loading		All elements of the structures have been designed and fabricated from materials such as		If weather conditions expect wind gusts to exceed 50km per hour. The structures should be	JLX	Daily checks	The residual risk rating is negligible

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		tube, pipe, rod and cable in order to minimise surface area wind loading. The structure has been certified by an engineer (certification attached). The structures have been exhaustively tested in the workshop and on external sites and have been observed to not present any issues in regard to wind loading for mild to moderate situations.		powered down and elements such as the thin film solar panels removed should be removed until weather conditions normalise			
Climbing on the structures	Members of the public may be tempted to climb on the tri truss structure, causing a risk to their safety.	To minimize the risk of climbing, the vertical truss has been covered in neoprene fabric which provides a visual and phyisical deterrent to climbing by a child The use of the neoprene sleeve provides a barrier to gaining a foothold that satisfies the test requirements of HB 295.3.28-2008 (R2016)	Low	If it is observed that the neoprene sleeves prove an ineffective deterrant for adults, an alternative such as corolite panels may be implemented.	JLX		The residual risk rating is negligible
Electrical hazards	Electronic circuitry and wiring may pose a risk to health and safety if exposed directly to people and water.	All electronic circuitry has been covered or enclosed in waterproof containers. All exposed electrical connections have been made with waterproof connectors.	Low	Electronic enclosures will be inspected regularly and all seals maintained accordingly	JLX		

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		Fuses on main 12 volt power system.					

Approved by (Name): _____ Signature (email address when completing this form on-line is acceptable): _____

Date: _____

HAZARD IDENTIFICATION TABLE

When undertaking risk assessments, legislation, Codes of Practice and Australian Standards should be referenced to assist with determining appropriate measures for controlling risk. References provided in the table is not an exhaustive list. Access Australian and International Standards via the Griffith University licence.

Reference should also be made to:

- How to Manage Work Health and Safety Risks Code of Practice 2011

- Work Health and Safety Consultation, Co-operation and Co-ordination Code of Practice 2011
- AS 1470-1986 Health and Safety at Work – Principles and practices
- Manufacturers or operators instructions, Information and advice from relevant Industry bodiesSafety Data Sheets
- Hazard alerts, incident reports, first aid register, workers' compensation records, maintenance records
- Griffith University Health, Safety and Wellbeing Website, Procedures and Guidelines

Risk Factor	Describe	Consider	References that may assist
Biological	Animal e.g. insects/rodents Human body parts Micro-organisms e.g. prion/bacteria/virus/call culture Plant Material Tissue/Fluids e.g. human/plant Any other biological hazards?	*Environmental exposure/unintentional release* *Equipment and Processes used* *Health Effects and Exposure Routes* *Legislative requirements & approval conditions* *Level of Physical Containment Facilities* *Other Containment requirements* *Storage, Labelling and Handling* *Transport and Disposal*	*AS 18941997 - The storage and handling of non-flammable cryogenic and refrigerated liquids* *AS/NZS 2243 (Series) Safety in laboratories* *AS 2252 (Series) Biological safety cabinets* *AS 3745:2010 - Planning for emergencies in facilities* *AS 4775:2007 - Emergency eyewash and shower equipment*
Chemical	Dangerous Goods (attach current SDS/EPG) Drugs & Poisons (attach current SDS) Hazardous Chemicals (attach current SDS) Hazardous Substances (attach current SDS) Nanoparticles Prohibited and Restricted Carcinogens Any other chemical hazards?	*Duration of Exposure* *"Health (Drugs and Poisons) Regulation"* *Health Effects and Exposure routes* *Labelling* *Storage and Handling* *Transport and Disposal* *Use* *"Work Health & Safety Regulation Chapter 7"*	Labelling of Workplace Hazardous Chemicals COP 2011 Managing Risks of Hazardous Chemicals in the Workplace COP 2013 National COP for Chemicals of Security Concern 2016 *AS 1940:2017 - The storage and handling of flammable and combustible liquids* *AS/NZS 2243 (Series) Safety in laboratories* *AS 3745:2010 - Planning for emergencies in facilities* *AS 3780:2008 - The storage and handling of corrosive substances* *AS 4775:2007 - Emergency eyewash and shower equipment*
Energy	Electrical Laser Noise Radiation Vibration Any other energy hazards?	*Equipment* *Experience* *Exposure Routes* *Hazardous Materials* *"Radiation Safety Act" prescriptions*	Managing Noise and Preventing Hearing Loss at Work COP 2011 Electrical Safety COP 2013 – Managing Electrical Risks in the Workplace *AS/NZS 2243 (Series) Safety in laboratories* *AS/NZS 1269 (Series) Occupational noise management* *ISO 2919:2012 - Radiological protection – Sealed radioactive sources – General requirements and classification* *ISO 3925:2014 - Unsealed radioactive substances – Identification and documentation*
Manual Tasks	Force Nature of Load Posture Repetition Weight Any other manual task hazards?	*Actions/Processes* *Distance* *Duration* *Environment* *Quantity* *Tools/equipment/manual aids*	Hazardous Manual Tasks COP 2011 Manual tasks involving the handling of people COP 2001
Risk Factor	**Describe**	**Consider**	**References that may assist**
People	Client interactions Psycho-social Travelling/journey Working alone/late Working from home	*Expectations and Workloads* *Experience* *Harassment* *Nature of work* *Personal issues*	Guide for preventing and responding to workplace bullying: 2016 Dealing with workplace bullying – a worker's guide: 2016

	Any other people hazards?	*Physical environment* *Security* *Supervision and Training provided* *Other stress factors*	
Physical	Confined/enclosed spaces Construction work Environmental conditions Evacuation Field work First Aid Objects Slip, trip, fall Work area design Working at heights Any other physical hazards?	*Communication* *Environment including Weather* *Equipment* *Experience* *Hazardous Materials* *Location* *Medical factors of people* *Processes/Work tasks* *Training provided* *Transport*	Managing the Work Environment and Facilities COP 2011 Managing the Risk of Falls at Workplaces COP 2018 Confined Spaces COP 2016 AS/NZS 1891 (Series) - Industrial fall-arrest systems and devices Safe Design of Structures COP 2013 First Aid in the Workplace COP 2013 Occupational Diving Work COP 2005 Recreational Diving, Recreational Technical Diving and Snorkelling COP 2018 *AS 2865:2009 - Confined spaces* *AS/NZS 2299 (Series) Occupational diving operations*
Plant	Crushing Cutting, stabbing, puncturing Entanglement Equipment/tools – powered/non-powered Ergonomics Explosion Friction High pressure fluid Impact Suffocation Temperature extremes Any other plant hazards?	*Access* *Compliance with relevant Australian Standards* *Fit for purpose* *Guarding* *Noise* *Training* *Type* *Working alone* *Working conditions*	Managing Noise and Preventing Hearing Loss at Work COP 2011 Managing Risks of Plant in the Workplace COP 2013 Spray painting and Powder Coating Code of Practice 2013 Welding Processes COP 2013 *AS/NZS 1418.10:2011 - Cranes, hoists and winches - Mobile elevating work platforms* *AS 1473:1991 - Guarding and safe use of woodworking machinery* *AS 1893:1977 - The guarding and safe use of metal and paper cutting guillotines* *AS 4024 (Series) Safety of machinery* *AS 4839:2001 - The safe use of portable and mobile oxy-fuel gas systems for welding, cutting, heating & allied processes* *AS/NZS 1269 (Series) Occupational noise management*
Psychosocial	Autonomy/job control Change management Job demands/workload Organisational justice Recognition/career development Relationships Role conflict/ambiguity Support	*Environment, i.e. noise, air quality, exposure to heat/cold* *Individual factors, i.e. personal resilience, experiences, family issues* *Organisational issues*	Guide for preventing and responding to workplace bullying: 2016 Dealing with workplace bullying – a worker's guide: 2016