



Abseil Wall

Standard Operating Procedure

and

Risk Management Plan



Version 1 – 2021

Reviewed Nov 2023

OVERVIEW

Abseiling is a part of the Blue Lagoon Adventure at Heights program and is a fun and challenging activity for all ages and skill levels. The tower has two separate sections to challenge different abilities. It tests physical coordination, personal boundaries and is a mental challenge for the participants. Trust and peer support are important factors of this activity.

OUTCOMES

Abseiling as a part of the Adventure at Heights program focuses on personal challenge, peer support, group encouragement and active participation. Participants will learn the practical skills involved in rappelling and safely securing themselves to a rope.

PRE-REQUISITES FOR INSTRUCTORS

Level 2 first aid

Indoor Climbing Guide Qualification (or equivalent)

LOCATION

Blue Lagoon's Artificial Abseil tower

PRIOR TO COMMENCING

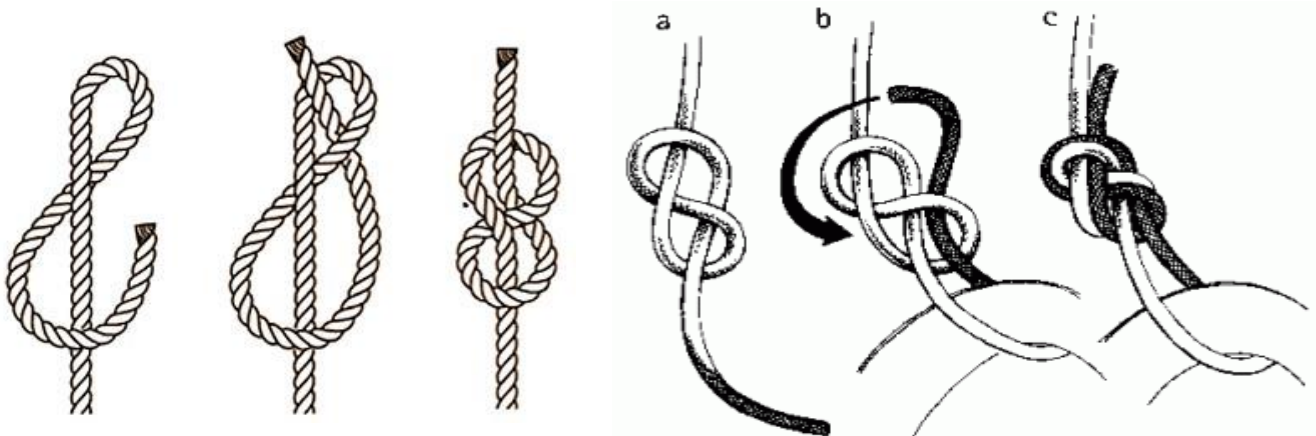
The instructor is responsible for checking, monitoring and maintaining equipment and recording usage and maintenance needs.

The instructor will need to set up the area prior to the participants arriving for their activity and correctly rig the ropes and tethers.

Knots must be tied correctly in each of the ropes and checked prior to participants beginning the activity.

Instructor must check weather conditions are appropriate for abseiling. Wind ratings above 20 km/h and wet conditions are not advised.

Figure Eight Knot (follow through)

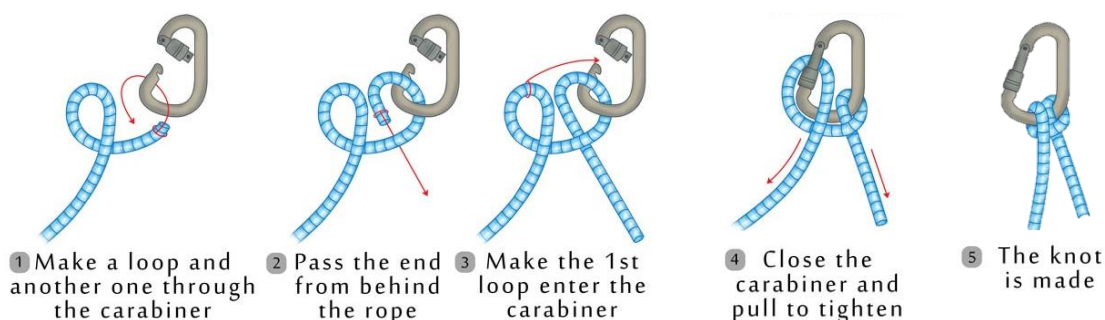


1. Tie a simple figure eight knot

2. Loop the working end through your carabiner and proceed to rethread the knot, following the other piece of rope as you go

3. To finish the knot check that you have followed the first knot correctly and that it sits neatly. You will need to ensure that there is a minimum of 10cm of tail when the knot is pulled tight.

Munter Hitch (belay knot)



1. Make a loop and another one through the carabiner

2. Pass the end from behind the rope

3. Make the 1st loop enter the carabiner

4. Close the carabiner and pull to tighten

5. The knot is made

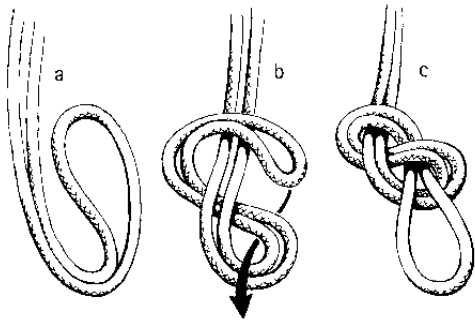


Figure Eight on a bight knot (safety knot)

Stopper Knot



1. Grab hold of rope so you have a long working end. Make a crossing turn around the fingers of the hand that's holding standing end.

2. Start wrapping the working end around the fingers along and over the standing end.

3. After you've created a few wraps, take the loops you've created off your finger and tuck the working end through the middle

4. Push the working end through the middle of the loops until it comes out of the other side

5. Dress the knot by pushing the loops down the standing end while pulling the working end in the other direction.

SET UP OF WALL

Each wall requires a top rope setup that includes an abseil rope (static), a belay rope (dynamic), a figure 8, 5 carabiners, a participant tether and a belayer's tether.

Firstly, the two safety tethers should be secured to the anchor bar prior to any rigging being done and the person setting up should be harnessed and attached to a safety line.



Abseil Line fastened with Figure 8 rethread



Rigged Abseil station

The abseil rope should be fastened to the anchor bar using a figure 8 rethread.

The abseil line should then go up and over the top beam and hang down the face of the wall. For more advanced groups the abseil line may be fed straight off the edge instead of over the top beam to increase difficulty.

The end of the belay line should be fastened around the anchor bar using a figure 8 rethread knot this loop becomes the anchor for the carabiner for the Munter Hitch.

****It is important that a large pear shaped carabiner is used so that the Munter Hitch will work properly****



Climber's Belay rope with figure 8 on a bight



Munter Hitch setup

The participant's end of the belay line should have a figure 8 on a bight tied in the end. This can either be tied directly into the participant's harness or can be fastened around a carabiner which is used to attach into a participant's harness.

The belayer's end of the rope should be tied around the anchor bar and a carabiner fitted through the loop. This becomes the anchor for the belay line. Alternatively, a sling can be used as the anchor with both ends fastened through a large carabiner. The rope should then be formed into a Munter Hitch on the carabiner attached to the sling on the anchor bar and the carabiner locked.

INITIAL INTRODUCTION AND PARTICIPANT BRIEFING

All participants must be briefed on correct techniques of Abseil and self-belaying before participating in the activity. Abseiling can be a high-risk activity if it is not done correctly.

All long hair must be tied back and any food or gum disposed of before commencing

Any loose clothing should be removed prior to the activity and all participants must be wearing closed toe shoes.

Point out first aid, rescue kit and toilets and advise participants to use the bathroom before the activity commences.

Next, all participants should be fitted with a helmet and harness.

HARNESSES FITTING

Using one leg at a time step through the waist belt and into the leg strap as you would when putting on a pair of shorts.

Pull the waist belt up until the belay loop is up level with your navel and above your hip bones.

Tighten the waist belt.

Smooth shorts or pants before tightening the leg straps as bunched clothing can make you uncomfortable. All straps should be done up firmly.

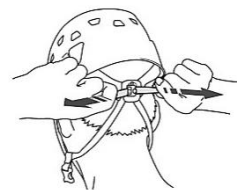
Ensure participants are standing up straight when they tighten their leg straps as bending forward as you do this can result in the harness pulling uncomfortably later on.



HELMET FITTING

Helmets must be fitted before entering abseiling area. Our helmets are one size and are adjustable to fit a range of people. People with long hair will need to tie it back low on their neck to avoid it interfering with helmet fit.

Helmets should sit low on the forehead and once the chin strap is done up the two tabs at the rear of the helmet can be pulled to adjust it to size.



SPECIFIC ACTIVITY SAFETY AND INSTRUCTIONS

Once participants are fitted with helmets and harnesses they may move into position by the wall.

Explain the safety check system to the participants

A – anchors and attachments

B – buckles

C – carabiners

D – devices

E – everything else (hair tied back, loose clothing removed, etc)

Demonstrate Self-Belay technique



Participant should be shown how to attach to the abseil and belay ropes and how to correctly belay themselves down the wall.

They should take the break rope in both hands and hold it in a downward direction. They can lift their hands out to the side slightly to allow the rope to move through the device more freely and bring it into a more direct downward position to slow the decent. Their grip on the rope will dictate the speed and the angle they hold it at will adjust the friction generated by the device.

The participant has control of the speed of decent while the belayer will take over if the participant loses control or descends too quickly.

Demonstrate how the participant should approach the Abseil.

First instruct them to clip into their tether rope.

The carabiner should be screwed shut and squeeze tested to ensure the gate is closed.

The participant then approaches the instructor and their figure 8 belay device should be attached to the abseil rope.



To attach your figure 8 to the abseil line, take a bight of rope and pass it through the large hole in the device. Pass the loop created from the bight over the small end of the device then clip your carabiner through the small loop and hook in on to your harness making sure to lock the carabiner as you do.

The belay line should also be fastened to the participant's harness.

All carabiners should be double checked to ensure they are all locked before commencing.

Once attached to the abseil and belay lines the participant can then unhook from the safety tether.

The belayer needs to stand in position between the anchor bar and the edge of the tower so they can control the belay line while watching the participant.

Belaying

To begin the decent the participant will need to stand on the edge of the tower with their back to the drop. Once the tension is taken up on the abseil and belay lines the participant then needs to lean backwards until they are at least 45 degrees from the tower. As they lean back they will be able to transfer their feet onto the face of the wall and begin to lower themselves down while walking their feet down the face of the tower.



Lowering – with a Munter Hitch When your participant is ready to be lowered, hold the brake side of the rope with both hands. As the participant lowers themselves down the wall allow the rope to feed through the carabiner. If the participant loses control or descends too quickly the belayer can slow them by slowing the decent of the belay line.

When leaving the wall the participant will need to unhook their device from the rope and unclip the belay line from their harness. The figure 8 and carabiner from the abseil line can be attached to the belay line for retrieval by the belayer. The participant should leave the drop zone directly. No one should walk underneath another station in case something is dropped from the climber or tower.

Once the participant is out of the drop zone the belay line may be retrieved and the next participant made ready.

Safety checks must be done before every single participant regardless of whether anything has been changed.



Australian (face first) Rappel.

For groups who have more courage and have proven their ability to control their descent they may like to try a forward-facing rappel.

In order to do this the harness must be fitted (back to front) with the tie in point at the back. The belay line and figure 8 are fastened to the tie in point the participant should hold the abseil line out in front of their body and control their decent by controlling the speed at which the rope passes through their hand. The belayer should belay as per usual.

Multiple Participants

It is permitted to have up to two participants rappelling off each tower at any given time. Each participant must have their own ropes, belayer and device and the two participants should be spaced far enough apart that they will not become entangled in each other's ropes.

DEBRIEF

Themes: Courage

Gather the group and discuss the different situations that arose during the activity. Highlight good peer support and have the kids share how they felt during their abseil.

“Courage is not the absence of fear but acting in spite of it.”

We can trust in the equipment, staff and our own abilities

It can be challenging but it is important that fear does not control us

This is my command—be strong and courageous! Do not be afraid or discouraged. For the LORD your God is with you wherever you go.” – Joshua 1:9

PACK UP

Explain the process of packing up and correctly stowing the participant equipment. Participants should return their harnesses and helmets to the rack.

All ropes should be retrieved, checked for damage or wear, coiled and then hung in the storage area.

Logs should be filled out regarding what ropes were used, which harnesses and helmets were used and for how many sessions.

Once all equipment is returned to store areas the tower the tower should be locked.

All equipment and logs should be stowed appropriately and any damaged equipment set aside and recorded for maintenance.

INSTRUCTOR RESPONSIBILITIES

Check all equipment is in good working order

Set up activity

Correctly rig the tower

Conduct participant safety briefing

Supervise group participation

Be able to effectively perform a rescue if required

Debrief and pack up activity

ABSEIL WALL RESCUE

This method of rescue may be required if there is an equipment malfunction, fearful participant or an entanglement whilst descending.

Equipment required

Abseil Rescue Pack (totem, gloves, carabineers, scissors)

2 x regular abseil set ups

Procedure

Assess the situation.

Check in with your climber, keep them calm and relaxed.

Stop all other abseiling, ensure other participants are in a safe location where they cannot interfere.

Tie off belay line.

Set up totem stop and go descent.

Instructor roles

Belay - ideally the instructor who was initially belaying for the participant

Responsibilities: assess and notify other instructors of the situation.

Talk to participant while rescuer organises rest of group.

Tie off participant and belay for rescuer if required.

Rescuer - ideally an instructor who is competent and comfortable descending alone

Responsibilities:

Organise rest of group, ensuring all other participants are in a safe location.

Reassure participant.

Set up rescue descender.

Descend wall and assist participant down the wall.

Tying off belay line

Start with Munter hitch in belay line.

Grab a large bight of rope, keeping tension on the line.

Pull bight over and through figure 8 tie in loop.

Pull bight through loop you have just created and pull tight towards belay line.

Repeat to form a second knot.



Stop and Go Auto Locking Method

Face totem horizontally towards you, square end on same side as non-dominant hand.

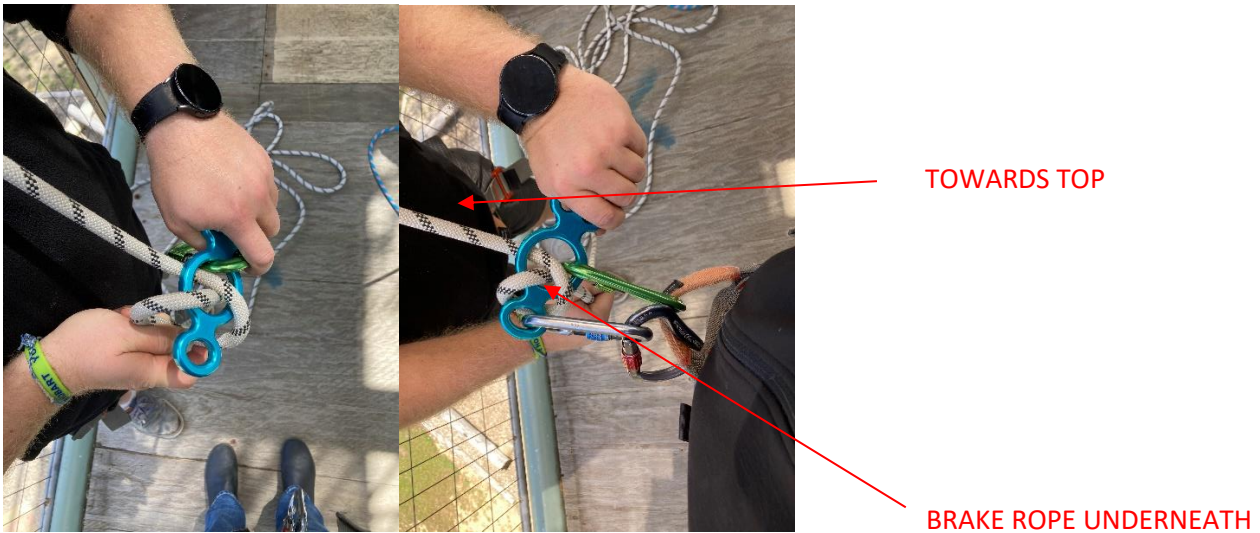
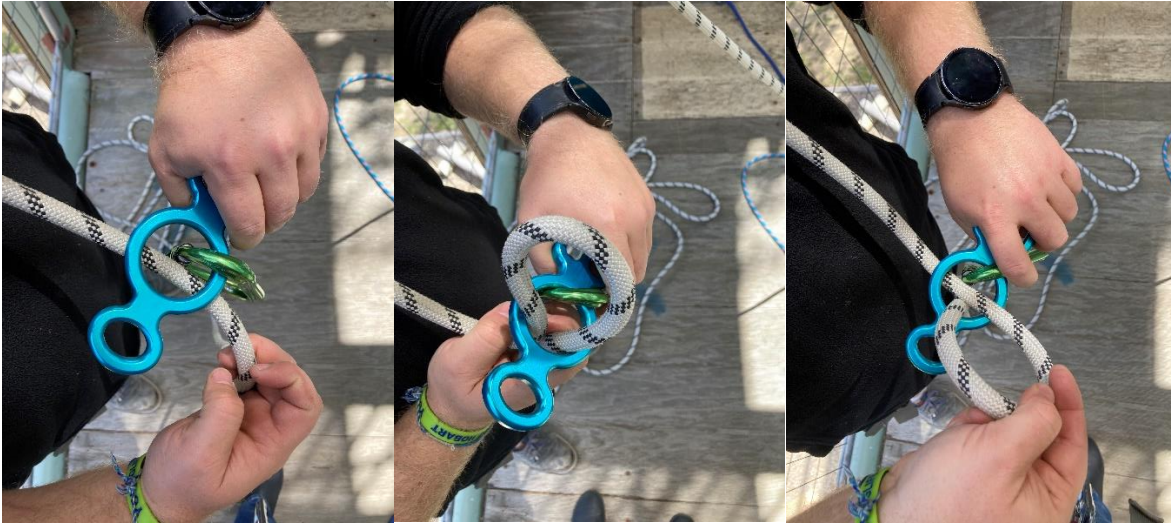
Grab a bight of rope, pulling up through the large circle.

Create a half hitch, ensure that brake rope is underneath and pull over the neck between the small and large circle.

Connect 1 carabiner to the brake hand side of the large circle and attach to harness.

Connect either 2 carabiners or 1 carabiner and a prusik loop to small circle and attach to harness.

To descend push totem up in a vertical position, to lock off release hand from totem.



****Set up for left brake hand****

ASSESSING THE LEVEL OF RISK

Once risks are identified, they are evaluated on a 2 dimensional matrix using a qualitative rating of the likelihood of the event occurring and the scale of the possible consequences. When risks have been identified, they are analysed by combining the consequences and likelihood to produce a level of risk. This form of evaluation provides a good graphical representation of how serious the risk is or where it lies within a group of risks. The risk analysis provides information critical to determining what risks need to be treated and what risks are accepted.

The following matrices have been utilised for the assessment process;

Table 1: Likelihood Matrix

Level	Descriptor	More Detail
A	Almost certain	Will occur. Expect frequent/regular occurrences.
B	Likely	The event will probably occur more than once
C	Possible	The event might occur at some time
D	Unlikely	The event is not expected to occur
E	Rare	The event may occur only in highly exceptional circumstances

Table 2: Consequence Matrix – relate to the *most probable* outcome.

Eg. A fall from a windsurfer is most likely to result in **no or minimal injury and therefore be rated as 1-2 ie. insignificant/minor.**

Level	Descriptor	More Detail	Injuries	Potential Operational Impact
1	Insignificant	Low Impact, no injuries/damage, low profile.	None	Student still able to participate. Little impact <30min
2	Minor	Minor Injuries/damage sustained. Low impact, possible public embarrassment.	First Aid Treatment	Student able to participate after treatment. Low impact <30min
3	Moderate	Significant injuries/damage sustained. Public embarrassment possible.	Medical Assistance Required	Student unable to continue with activity. Instructor impact whilst treatment given.
4	Major	Extensive injuries/damage sustained. Loss of instructional capabilities, public embarrassment, 3 rd party action, high news impact	Extensive Injuries. Medical Treatment	Loss of instructor/s whilst treatment/medical aid given. Extended rehabilitation of injury/damage repair.
5	Catastrophic	Public embarrassment, 3 rd party action, high news and media impact.	Deaths	Loss of instructor/s, closure of centre whilst investigation conducted.

Table 3: Level of Risk – consideration of both likelihood and consequence.

		Consequence				
		1	2	3	4	5
		Insignificant	Minor	Moderate	Major	Catastrophic
Likelihood	A Almost Certain	High	High	Extreme	Extreme	Extreme
	B Likely	Medium	High	High	Extreme	Extreme
	C Possible	Low	Medium	High	Extreme	Extreme
	D Unlikely	Low	Low	Medium	High	Extreme
	E Rare	Low	Low	Low	High	High

Important Note: Following the identification and implementation of risk management control measures it is assumed that all Risk Descriptions will be reconsidered as having a “low risk” factor. If the re-assessed level of risk remains at “Extreme” or “High” following implementation of control measures serious consideration should be given to not proceeding with this activity. Risk vs Reward for this specific activity should be carefully considered!!

Table 4. Risk Priority – an indication of how quickly/frequently an identified risk needs to be addressed and/or monitored.

Rating	Description
Low	Low priority.
Medium	Medium priority.
High	High Priority. Requires immediate action to redress risk. Additionally, risk should be closely monitored to ensure management strategies to reduce risk are effective.

Important note: The assessment and identification of Risk Priority should not be solely based upon the likelihood or frequency of an event occurring, but more a consideration of a number of factors, including: *frequency, likelihood, consequences (particularly the possibility of serious personal injury or death) and risk of litigation or legal exposure!* A student competing in a bicycle tour event on a controlled public road is very unlikely to be involved in a collision with a motor vehicle, however the consequences may well be most serious, with the possibility of a serious injury and possible legal exposure. Therefore a Risk Priority rating of **High** should be applied, with appropriate risk management.

Risk Register/Risk Management

Activity: **Artificial Abseil**



Activity Description: Artificial Abseiling at Blue Lagoon involves descending a 6 or 9 metre artificial wall, starting from a platform built on the top of a permanent structure situated on the playing field. Abseiling is a fun and challenging activity designed to place participants in limited control of a descent from a height. Abseiling helps participants face fears, take responsibility, develop confidence, and improve communication.

General Safety consideration: Known hazards will be identified to all participants, in particular the risks to participants when rules and instructions are not followed. Participants will be required to remove loose clothing and tie back long hair. Harnesses and helmets are to be worn by all participants. Closed toe shoes must be worn by all participants. Safety checks must be carried out before each abseil. A qualified instructor must be present when abseiling is being run.

Risk description. What and how can it happen	Likelihood (Refer Table 1)	Consequence (Refer Table 2)	Level of Risk (Refer Table 3)	Management. Including existing Control measures to eliminate or reduce the risk. Note: Once the risk management measures listed below are followed all risks described in column 2 will be reconsidered as having a "Low Level of Risk".	Priority (Refer Table 4)
Danger from falling objects	D	2	LOW	<ul style="list-style-type: none"> Loose equipment kept away from abseil edge Participants briefed on safety near bottom of abseil Participants required to wear helmets for activity Helmets required to be worn by anyone at bottom of abseil wall, signs warning of such 	
Injury due to faulty equipment	D	2	LOW	<ul style="list-style-type: none"> All equipment to be checked prior to the start of the session Regular monitoring of Equipment condition. Rope usage logged. 	
Injury due to ill-fitting equipment	C	2	MEDIUM	<ul style="list-style-type: none"> All equipment to be checked prior to climbing All equipment to be checked by supervisor before climbing is permitted. 	
Rope Burn	C	3	HIGH	<ul style="list-style-type: none"> Participants briefed and instructed on proper technique for descent Activity Facilitator helps control descent through top belay Gloves provided to participants 	
Entanglement - Hair / clothes / other items caught	C	2	MEDIUM	<ul style="list-style-type: none"> Long hair must be tied back Loose items may not be carried when climbing/belaying Clothing must not be too loosely fitted as to cause entanglement No long or dangling jewellery permitted to be worn 	
Fall from Height	D	4	HIGH	<ul style="list-style-type: none"> Abseil platform has clear safe zone marks, and fences on sides and back Abseil platform off limits to participants without Activity Facilitator supervising 	

				<ul style="list-style-type: none"> • Participants and Facilitators attached to safety lines within two metres of edge of wall • Participants wear safety harnesses while on the platform / abseiling • Participants are connected to a top belay line (controlled by Activity Facilitator) while abseiling • Equipment protected from sharp edges with protective equipment • Equipment rated and maintained for loads well above actual load placed upon it 	
Slipping/tripping around the activity area	C	2	MEDIUM	<ul style="list-style-type: none"> • Potentially dangerous areas fenced off • Stairs provide access to upper and lower levels of abseil area • Platform and abseil area kept free of sticks etc. • Bottom of abseil wall dressed with appropriate surface. 	
Impact injury from hitting wall or landing to hard.	C	3	HIGH	<ul style="list-style-type: none"> • Participants briefed on and demonstrated proper way to abseil prior to abseiling themselves • Activity Facilitator helps control descent through top belay 	
Inverting/participant flipping upside down	C	2	MEDIUM	<ul style="list-style-type: none"> • Proper harness fitting demonstrated, and harnesses checked for each participant prior to abseiling • Chest harnesses fitted to participants that are considered high risk of inverting • Participants briefed on proper foot placement during abseil • Activity Facilitators helps control descent with top belay • Activity Facilitators trained to quickly re-invert participants who may invert 	
Structure failure	E	5	HIGH	<ul style="list-style-type: none"> • Regular inspections of structure and anchors performed by activity staff • Yearly inspections by external assessor performed • Platform built to building standards, bolts rated for loads placed upon them, 2 anchors always used 	