General

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| **RISK** | **To who** | **ACTION or CONTROL** |
| Failure of equipment | All | Regular checks of the tower made  1 prior to each opening (by instructors)  2 Routine inspection every three months (nominated persons)  3 annual inspection each calendar year at no more that 15 month interval (JMA appointed inspection body)  (See operating procedures for inspection list)  Any unsafe defects corrected ` |
| Injuries due to falling off | All | Activity must be run by competent instructors.  Helmets must be worn by all inside the activity area.  All instructors and participants should be attached to an appropriate safety lanyard before leaving the gated area on the platform  See individual sections for appropriate safeguards for each element  Gates at top padlocked when not in use  Gates closed behind participants  Only one participant beyond gated area |
| Unsupervised use could result in injury | All | Locked gate and high fence in place to prevent entry when not in use.  Warning signs erected.  Tower to be locked when not in use  Wall curtains in place after last session  Ropes stored out of reach when not in use  Equipment locked away when not in use  Warning signs placed |
| Slips trips and falls | All | No running inside fenced area  Ground covering free of debris  Stairs free of debris  Participant briefing  Anti slip edging to stair case  Appropriate working light  Appropriate footwear worn (fastenable/close fitting not flip flops) |

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| Climbing/abseiling |
| Significant hazards | People affected | Existing controls |
| Anchor failure. Abseil rope failure. | Participant | - Multiple anchors.  - Safety rope in use on all occasions.  - Protect against wear points.  - Check prior to use  - Protect ropes against wear points.  - Log of rope use. |
| Safety rope failure | Participant | - Log of rope use  - Rope inspection by instructor before and after each session. |
| Debris from above | Participant & instructor | - Helmets to be worn at all times  - participants pockets emptied |
| Harness connection failure | Participant | - Harness checked prior to climb  - Connect safety rope to belay loop on harness  - Check equipment life span not exceeded  Use a double check principal where participant is shown the attachment  No false loops through poor stopper knot position or taping of dead rope |
| Climber falling sideways | Participant | - Helmet worn  - Instructors to ensure appropriate routes used |
| Hair caught or other jamming abseil device | Participant | - Clear clothing & hair prior to climb.  - Employ releasable abseil rope technique |
| Getting caught in loose rope | Participant & instructor | - Make sure ropes are tied properly  - Make sure loose ropes are neatly coiled out of way |
| Cut feet | Participant | - Participants must wear shoes or trainers |
| Infection | Participant & Instructor | - Waterproof plasters to be worn and participants told to was hands after climbing |
| Environmental factors | Participant & instructor | - Sun cream if necessary  appropriate clothing to be worn  monitor participants for signs of hypothermia/sun stroke |
| Falling from tower | Instructor & participant | - Harness and safety line to be worn when working on the top platform.  Participants on safety line when at top.  Ensure gates ar closed behind participants  One participant through per instructor through the gate  Only one participant waiting on the top platform at a time  Gates padlocked when not in use |
| Loss of control due to distraction | Participant & instructor | - Groups to be kept to a manageable size  - Non active participants to be kept away from belay area  - Second person present to supervise group  - If youth belaying, ensure rope tails held by 3rd person  Only one participant waiting on the top platform at a time |

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| High Rope elements |
| Potential Hazards | Potential Outcome | Risk Level  Prior to Controls  (High, Med, Low) | Preventative Measures | Risk Level  After Controls  (High, Med, Low) |
| General Risks |  |  |  |  |
| Un-authorised use of high rope elements | Falling – broken limbs/injury/death | H | No unsupervised access to tower.  Warning signs –‘Do not use without instructors’  If outside, Course enclosed with a 6ft fence.  Lower elements locked away in compound | L |
| Equipment Failure | Falling – broken limbs/injury/death | M | No smoking in the area or when wearing ppe.  Equipment checked regularly for wear & tear.  Damaged equipment to be removed & destroyed. | L |
| Objects falling | Broken limbs/injury/death | H | Use of helmets at all times.  Clients to remove all objects from pockets prior to climbing.  surrounding area checked for dead wood. | L |
| Harness Failure | Falling – broken limbs/injury/death | M | Instructional procedure.  Instructor checks all participants ppe prior to climbing.  Use of full body harness for all users. | L |
| Entanglement or holding of moving ropes | Rope burn, damaged limbs, death | H | Instructional procedure.  Participants briefed on holding their own knot & no other ropes. | L |
| Loss of belayer concentration, incorrect belay technique | Falling – broken limbs/injury/death | H | Instructional procedure.  All lower offs managed by instructors.  Instructor holding dead rope or overhand knots tied in dead rope when clients belaying. | L |
| Holding wire cables & clamps | Cuts & Abrasions | M | Participants not allowed to touch any part of cables. | L |
| Entrapment in moving parts of course. | Damaged limbs | H | Participants not allowed to hold onto any areas with joining/moving parts  Trapeze should be locked in position with participants on the ground | L |
| Poor Instruction | Falling – broken limbs/injury/death | M | All trainers to complete training with vertex or an ERCA approved training provider.  Thorough teaching progressions backed up by Operating Procedures & Risk Assessments.  All site run courses to be assessed by 2 ERCA trained instructors and moderated by the County Training Team | L |
| Instructor Injuries when accessing | Falling – broken limbs/injury/death | M | All staff to be trained in accessing the tower.  Only trained and competent staff to access the tower for inspection and maintainance  As second person should accompany the member of staff accessing the tower for inspection and be capable of performing a recue if necessary | L |
| Participant hitting objects on decent | Bruising/Broken Limbs | H | Instructional technique. Tight rope at all times.  Slow & controlled lowering by the instructor.  Participant briefed on using hands & feet to fend off objects whilst being lowered. | L |
| Structural Failure of the tower | Broken limbs/injury/death | M | Regular visual checks by instructors & on site management.  Inspections & maintenance by JMA approved inspector.  Structure designed by qualified engineer. | L |
| Jacobs Ladder & All Aboard |  |  |  | L |
| Twisted Ropes | Bruising/Broken Limbs | H | Instructional technique.  Ropes checked throughout activities. | L |
| Colliding with other participants | Bruising/Broken Limbs/Unconsciousness | H | Instructional Technique.  Well managed ropes. | L |
| Traversing Elements |  |  |  |  |
| Tripping on belay cables | Bruising/Broken Limbs | H | Instructional Technique.  Participants to be made aware of cables & associated risks. | L |
| The Elements |  |  |  |  |
| Heat | Heat Exhaustion | M | Participants advised to bring/drink fluids. | L |
|  | Dehydration | M | Participants advised to bring/drink fluids. | L |
| Sunshine | Sunburn/sunstroke | M | Participants advised to bring/wear sunblock. | L |
| Cold/Wet | Hypothermia | H | Participants advised to bring waterproofs.  Participants advised to wear warm clothes if the weather looks to be cold. | L |
| Strong Winds - Falling trees/wood | Broken limbs/injury/death | M | Tower visually inspected during daily set up.  Not to be used during high winds (40mph) |  |
| Electric Storms - Lightening strike | Electrocution/broken limbs/injury/death | M | Tower not to be used during electrical storm.  There must be a 20 minute wait after lightening has been sighted before use. | L |

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| Zip Line |
| Potential Hazards | Potential Outcome | Risk Level  Prior to Controls  (High, Med, Low) | Preventative Measures | Risk Level  After Controls  (High, Med, Low) |
| General Risks |  |  |  |  |
| Un-authorised use of zip line | Falling – broken limbs/injury/death | H | No unsupervised access to tower.  Warning signs –‘Do not use without instructors’  Course enclosed with a 6ft fence.  Top gates padlocked shut when not in use. Shut gate principal when opperating | L |
| Equipment Failure | Falling – broken limbs/injury/death | M | No smoking in the area or when wearing ppe.  Equipment checked regularly for wear & tear.  Damaged equipment to be removed & destroyed.  Instructors trained to recover participants for who equipment failures leaves them at height | L |
| Objects falling | Broken limbs/injury/death | H | Use of helmets at all times.  Clients to remove all objects from pockets prior to climbing.  surrounding area checked for dead wood.  Safety net in place at take off area  Line should be clear of obsticles and route of rider should be clear before releasing rider to go  Visual signal with ground instructor that landing area is clear before releasing rider to go | L |
| Harness Failure | Falling – broken limbs/injury/death | M | Instructional procedure.  Instructor checks all participants ppe prior to riding.  Use of full body harness for all users. | L |
| Entanglement or holding of moving parts | Rope burn, damaged limbs, death | H | Instructional procedure.  Participants briefed on holding their own knot & no other ropes/cables  Participant should not be abel to reach trolly when riding  Participants reminded about not putting head through ropes | L |
| Loss of instructor concentration/ incorrect belay technique | Falling – broken limbs/injury/death | H | Instructional procedure.  All lower offs managed by instructors/assistants holding dead rope as soon as trolly stops  Instructor verbally confirms 5 squeeze checks with client | L |
| Holding wire cables & clamps | Cuts & Abrasions | M | Participants not allowed to touch any part of cables. | L |
| Entrapment in moving parts of course. | Damaged limbs | H | Participants not allowed to hold onto any areas with joining/moving parts | L |
| Poor Instruction | Falling – broken limbs/injury/death | M | All trainers to complete training with vertex or an ERCA approved training provider.  Thorough teaching progressions backed up by Operating Procedures & Risk Assessments.  All site run courses to be assessed by 2 ERCA trained instructors and moderated by the County Training Team | L |
| Instructor Injuries when accessing | Falling – broken limbs/injury/death | M | All staff to be trained in accessing the tower.  Only trained and competent staff to access the tower for inspection and maintainance  A second person should accompany the member of staff accessing the tower for inspection and be capable of performing a recue if necessary  Means of communication should be held either mobile phone or radio | L |
| Participant hitting objects on decent | Bruising/Broken Limbs | H | Instructional technique. Tight rope at all times.  Slow & controlled lowering by the instructor holding dead rope  Participant briefed on using Petzle rig and holding dead rope while lowering. | L |
| Structural Failure of the tower | Broken limbs/injury/death | M | Regular visual checks by instructors & on site management.  Inspections & maintenance by JMA approved inspector.  Structure designed by qualified engineer. | L |
| Twisted Ropes | Bruising/Broken Limbs/entrapment | H | Instructional technique.  Ropes checked throughout activities.  Participant briefed as not to put body parts between ropes | L |
| Colliding with other participants | Bruising/Broken Limbs/Unconsciousness | H | Only one person may travel on the zip line at a time  Instructional Technique.  Well managed landing zone | L |
| Connection failure | Broken limbs/injury/death |  | Client briefing as to what and when to disconnect  Locking Karabiners used  Clearly identifiable Karabiner that needs to be disconnected  Staff trained to deal with lowering before removing back up line  No false attachment loops through correct fastening of stopper knots and not taping dead rope  Knots regularly checked and retied  Safety net in take off area |  |
| The Elements |  |  |  |  |
| Heat | Heat Exhaustion | M | Participants advised to bring/drink fluids. | L |
|  | Dehydration | M | Participants advised to bring/drink fluids. | L |
| Sunshine | Sunburn/sunstroke | M | Participants advised to bring/wear sunblock. | L |
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| Strong Winds - Falling trees/wood | Broken limbs/injury/death | M | Tower visually inspected during daily set up.  Not to be used during high winds (40mph) |  |
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