DS Tree & Landscapes Ltd

Health & Safety Manual

DS Tree & Landscapes
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Health and safety manual

Introduction part 1

It is a policy of the company to create a safe healthy and enjoyable working environment by providing the systems of work and equipment to achieve this along with the necessary information training opportunities and supervision supported by the attitude and commitment of all employees and subcontractors

The health and safety manuals purpose is to clearly explain the companies and employees obligations under the Health and Safety at Work Act 2015 and to provide methods to carry out these obligations. This manual is based on the "approved code of practice for Safety and Health in Aboriculture" November 2012

Accidents cost in money and also in physical terms in many ways and can ultimately affect the survival of the company and job security

Under the act the company shall take practical steps to:

Provide reasonable opportunity to employees or contractors who carry out our work to participate effectively in improving work health and safety in the business.

Provide and maintain a safe and healthy working environment;

Ensure that machinery and equipment is designed, set up and maintained to be safe;

Ensure that employees and public are not exposed to significant hazards;

Provide procedures to deal with emergencies and accidents that may arise in the workplace.

The employees also have responsibility for their own safety and the safety of the of others by

Reporting accidents;

Reporting hazards;

Following safe work practices;

Maintaining good housekeeping.

Health and safety management is implemented in three ways

1 Provide system to identify hazards

2 Provide practical methods and information to eliminate control and minimise hazards

3 Provide a system to deal with an accident. An accident report form is at the back of this document

General safety rules

1.1.1 Employer should nominate a competent person to be in charge of each operation. That person shall exercise such supervision to ensure that the work is performed in a safe manner at all times. A competent person shall take charge if it is necessary for this person to leave the operation.

1.1.2 Employers shall exercise such supervision to ensure that the work is performed in a safe manner. All workers should be properly instructed and trained in the work they are required to perform and the dangers or hazards involved in each operation

1.1.3 All workers will be required to apply themselves of the relevant safety rules for each operation and shall take all necessary precautions to ensure their own safety and the safety of others whilst working on particular operations

1.1.4 When operations become dangerous due to high winds wet weather and poor visibility or other conditions the employer or supervisor shall suspend all operations while its conditions exist. In emergency situations were should be minimum ensuring the area is made safe

1.1.5 No worker shall work in or visit an arboricultural site while under the influence of drugs or alcohol

1.1.6 Before any work is carried out or climbing is done proper inspections of the work area shall be carried out to identify hazards to the worker. Such hazards which may be decay or rot, dead branches, suspended materials e.g. Branches, interlocking branches or powerlines either within or close to the crown. All workers shall be given clear instructions on the work to be done and any hazards involved to themselves, property or to the public.

1.1.7 Unless training is being done on a one-to-one basis only one person shall be up a tree at any time on any tree work. At least two persons should be employed at any time on tree work however a tree specialist with competent experience and the proper equipment may work on their own on general tree work.

1.1.8 No person under the age of 15 shall work on any arboricultural operation.

1.1.9 All vehicles used in conjunction with arboricultural operation shall have a current warrant of fitness.

1.1.10 All tree worksites shall be left safe at the end of each working period and at the end of each day.

1.2 Transportation of workers

Drivers should be aware of the following points.
1.2.1 Drivers shall hold a current full licence while transporting others to and from work (and hold additional endorsements as legally required).

1.2.2 Any driver should be authorised by the employer.

1.2.3 Drivers should immediately inform the vehicle owner of any change in their driver's licence status.

1.2.4 Drivers shall not be impaired by drugs or alcohol.

1.2.5 If suffering from fatigue do not drive. (Stop or swap drivers).

1.2.6 Drivers should advise all passengers to wear safety belts.

1.2.7 Drivers should avoid distractions while driving, drive at a safe speed for the road, climate and conditions.

1.2.8 Take extra care when towing trailers (maximum speed for towing is 90 km/h).

1.2.9 Report all accidents/close calls/vehicle maintenance issues and driving infringements to the vehicle owner.

1.2.10 All tools, fuel and equipment shall be stowed securely in separate compartments designed specifically for such use.

2.0 Machinery

2.1 No machine shall be used unless it is:

2.1.1 Properly maintained a sound and safe condition and inspected at least daily in accordance with the manufacturers specifications

2.1.2 Suitable for the operation in capacity and design;

2.1.3 Operated by a competent person (or person training under adequate supervision);

2.1.4 Where appropriate equipped with brakes capable of holding the machine on any gradient on which it is operated;

2.1.5 Serviced and operated within the manufacturer's recommendations and specifications.

2.2 Operators should only use machinery and equipment they are trained and authorised to use, unless training under supervision.

2.3 Any person who discovers any defect in any machinery shall report to defect to the person in charge of the operation.

2.4 All defective machinery shall be shut down until repairs are made and the machine inspected before use.

2.5 Where machines are operating adjacent to or on roads or road verges, appropriate road signage shall be used in accordance with the consent and requirements of the New Zealand Transport Agency or the appropriate roading authority.

2.6 Material and equipment carried on vehicles shall be properly stored and secured to prevent movement, spillage and departure from the moving vehicle.

3.0 Protective clothing and equipment

General

3.1 Protective equipment suitable for the work being performed shall be provided, as required for the use of all workers by the employer. This includes High Visibility (hi-vis) clothing.

3.2 No persons shall interfere with or misuse any equipment provided for their protection and health.

3.3 Any form of outer garments such as overcoats and scarves are impractical and dangerous. Long hair shall be confined in such a manner as to prevent it being caught by any moving part of any tools or machinery.

3.4 Clothing

The use of the following protective clothing and equipment is required:

3.4.1 Chainsaw operator's trousers/steel capped safety footwear.

3.4.2 All workers using a chainsaw must wear appropriate safety leg protection:

3.4.3 Steel capped footwear must be used at all times when entering operation areas

3.5 Safety helmets

3.5.1 Safety helmets must be worn at all times by all persons using a chainsaw and by those on the ground, in or about an arboricultural operation.

3.5.2 All safety helmets shall comply with the requirements of the New Zealand safety regulations.

3.5.3 Safety helmets for chainsaw operators shall be fitted with at least grade 4 earmuffs and have provision for visors. Eye protection must be used at all times

3.5.4 Safety helmets should be of high visibility colours.

3.5.5 Helmets should be inspected regularly. They shall be replaced if damaged.

4.0 Hand tools

4.1 All tools should be kept in good working condition, be properly sharpened where applicable, and shall be restricted to the use for which they are intended.

4.2 Handles shall be securely and correctly attached to tools. Do not use tools with loose handles. Damaged handles must be replaced.

4.3 Split axe heads, damaged steel wedges, hammers and similar equipment shall be properly repaired or replaced.

4.4 Pole pruners should be provided with guards, or stored carefully to cover the heads when the pruners are not in use.

4.5 Jacksaws should have a guard or pouch equipped with a strap, rope or snap so they can be secured to the workers belt during work or while changing positions.

4.6 Saws, pruners and other tools should not be carried in the worker's hand while climbing. They should be raised and lowered by tool lines or clipped on to the climbing harness.

4.7 Tool lines should be attached to the end of the tool so that there is less chance of the tool being caught in obstructions when raising or lowering.

4.8 Tools must not be dropped or thrown to the ground in general operations. If it is necessary to drop or throw tools to the ground, a warning should be given and the ground area cleared.

4.9 All tools shall be removed from a tree when the worker has finished the task, or when the crew is finished for the day.

5.0 First Aid

5.1 A first aid kit or box should be kept in each vehicle and at each work area. If a vehicle with the first aid kit is leaving the site a first aid kit must be left on site.

5.2 Every box should be kept fully stocked, and should be stored so as to ensure that the contents are protected against contamination by dust, heat, moisture or any other source.

5.3 Where operations involve a number of people, first aid treatment for the injured shall be in the hands of the person who (by training or experience) is most qualified to do so. All workers shall hold a current first aid certificate.

5.4 No seriously injured person shall be moved until a careful assessment of the extent of the injuries has been made by the most qualified first aider present. If it appears to the person making the examination that there is a risk of complication of the injury, such as a back or neck injury the patient should be made as comfortable as possible without moving their position until qualified medical advice is available.

6.0 Reporting accidents

It is essential that all work injuries, including minor injuries and near misses are reported to the person in charge and recorded

Serious harm must be notified within seven days and can be done online on the following website

http://www.employment.govt.nz/Tools/Accident/Home/SeriousHarmNotification

7.0 Storage of petrol other inflammable liquids

Petrol and other flammable liquids shall be conveyed, stored and packed in containers that comply with requirements prescribed under the Hazardous Substances and New Organisms Act 1996.

7.1 Be made of metal or other approved materials;

7.2 Be of such construction of the contents cannot escape and either liquid or vapour form;

7.3 No flammable liquid shall be carried or stored in the same compartment of a vehicle as the personnel

7.4 When it is necessary to carry flammable liquids in vehicles, the container or containers shall be secured in a properly constructed compartment separate from that used to carry passengers. Such a compartment shall be accessible only from the exterior and vented to the exterior.

7.5 Flammable liquids shall not be transported in containers mounted to or protruding over the front or rear bumper of any vehicle.

8.0 Fires

Fires are not permitted to be lit as part of our operation.

9.0 Overhead powerlines

9.1 Electrical supply regulations and the electrical code of practice require that persons working with hand tools or ladders, and owners or operators of any machine working in proximity to live powerlines, shall keep tools or ladders or any part of the machine least 4 m away until advice been received from the electrical supply authority as to the safe working distance from that particular line.

9.2 All machinery likely to be used any time in the proximity of overhead powerline shall display, in a prominent place an approved warning notice regarding working near overhead powerlines.

9.3 Before working in the vicinity of powerlines staff will inspect the tree to be climbed or worked to determine if there are any wires passing through the tree or in any proximity to it.

9.4 If there is any doubt about safe working distances then the supervisor will obtain advice from the local power authority. The power lines may have to be de-energised before the work commences.

9.5 When working in the vicinity of powerlines, particular care must be taken with metal ladders, pruners and hand tools. Do not approach within 4 m of any live powerline until voltages have been confirmed by the supply authority.

9.6 Take particular care with trees or branches that may fall on to live powerlines, if necessary use ropes to ensure that the parts of the tree being removed fall away from the powerlines.

10.0 Underground services

10.1 If work involves stump grinding or removal, the appropriate authority shall be contacted if there is any doubt the location of any water main, sewerage pipe, stormwater, telecommunications or broadband ducts and cables, gas or powerlines.

11.0 Public safety

11.1 Where the public have access to any operation, a sufficient area shall be designated as a work area and the mark prior to starting work by the erection of warning signs or barricading or roping off. If there are still risks of injury to the public, one person should remain to supervise these precautions.

11.2 Branches and debris should be thrown or lowered, where applicable, away from any street and footpath, if possible. Otherwise the material should be removed immediately.

11.3 Tools and equipment should be kept off footpaths and roads and remain within the designated work area.

11.4 Work on or near public roads or rail traffic.

11.4.1 Trees shall not be felled unless suitable precautions had been taken to warn oncoming traffic. Such precautions shall include the posting of suitable warning signs and where necessary the placement of flag men get appropriate safe positions.

11.4.2 Where work necessitates a closing or partial closing of a road, the above precautions are to be taken and compliance is required with any of additional conditions laid down by the local road controlling authority.

Hazard identification - part two

Tree work is by nature a dangerous operation and must be carried out by adequately trained and competent personnel with total commitment and concentration towards all aspects of the job.

All employees and subcontractors will report to the manager any new hazard that arises during the course of the work and this will be acted upon in consultation with all employees.

As our worksite is constantly changing so too are the hazards and a vigilant effort from all members of the company and subcontractors is required to identify all hazards present. Any items reported will be dealt with by use of the standard OSH hazard control chart contained in this section of the manual.

All subcontractors must read and understand the company health and safety manual and comply with its directions. **Subcontractors must have their own health and safety manual and systems in place**

Operations manual/company procedures - part three

12.0 chainsaw safety

12.1 Operators should not use defective chainsaws, tools or protective equipment until they are restored to a safe condition.

12.2 All chainsaws held directly by hand shall have least one of the following securely attached in place and in good working order before it is used:

12.2.1 A safety mitt;

12.2.2 Rigid type hand guard;

12.2.3 Or a chain brake

12.2.4 Using a tear-away chainsaw lanyard/tool strop attachment is recommended practice when aloft

12.3 The chainsaw should be inspected before work has begun to ensure it is in safe working condition.

12.4 Except for the fine tuning of the carburettor, no cleaning, oiling or adjustments shall be carried out while the motor is running.

12.5 All operations relevant to tensioning the saw chain and any other maintenance shall be carried out in a safe manner to the manufacturer's specifications and recommendations.

12.6 Starting the chainsaw

12.6.1 Approved starting methods are:

A) Starting a chainsaw on clear ground.

B) Starting a chainsaw over a log.

C) Step over method for warm starting.

D) The throttle lockout should not be used when using A) and B) above.

12.7 Drop starting a chainsaw is prohibited. Chainsaw operation operators shall use all protective equipment, appliances or other means provided to afford protection and safeguard health.

12.7.1When starting a chainsaw aloft, use the extended arm technique. The chainsaw shall be held firmly in place or otherwise held in a manner that restricts the movement of the saw when pulling the starter handle. The chainbrake shall also be engaged.

12.8 Operators shall not operate or carry a chainsaw in a manner likely to endanger themselves or others.

12.9 A chainsaw shall not be used if:

A) The saw chain does not remain stationary when the motor is idling;

B) The Cutter, handles or control levers are loose;

C) Any parts are damaged, missing or ineffective; or the saw will not idle correctly.

12.10 Operators shall ensure that, where practicable;

A) All obstructions in the path of a chainsaw are removed before cutting operations begin;

B) A good footing and a safe, comfortable balanced working position are maintained;

C) During operations the chainsaw is held firmly with both hands, with the handles cradled between the sons and fingers and that used (if fitted);

D) They watch what and where they are cutting; and

E) They avoid overreaching with a chainsaw.

12.11 Operators shall pay particular attention to the dangers of carbon monoxide poisoning when working in situations where restrictions on the dispersal of exhaust fumes are encountered eg indoors

12.12 Except for short unobstructed distances, the chainsaw motor shall be stopped while being carried by hand, or the chain brake activated, if fitted.

12.13 To reduce the possibility of kickback and vibration, and to ensure a smooth cutting, the manufacturer's instructions for sharpening and maintaining the saw chain should be adhered to.

12.14 The chainsaw shall always be carried at the side of the body with a bar pointing to the rear, so it can be thrown clear in case of a fall. It should not be carried on the shoulder.

12.15 When a chainsaw is operated above shoulder height, care must be taken to ensure no part of the body is at risk from kickback or follow-through from the saw cut.

12.16 Refuelling the chainsaw. The following rules shall be followed when refuelling:

12.1 6.1 Stop the motor.

12.1 6.2 Place saw on clear ground. Fill the oil tank first to allow the saw to cool down.

12.1 6.3 Avoid spilling fuel on hot engine components, as excessive heat can cause ignition.

12.1 6.4 Do not smoke or have any spark or open flame near the filling point.

12.1.6.4a Refuel in an open space. Do not refuel in a closed area such as an elevating platform bucket. Fumes can collect causing an explosion or fire hazard.

12.1 6.5 When completed, wipe excess fuel from the saw.

12.1 6.6 Move least 3 m away from the refuelling site before restarting.

12.17 Reduction of vibration disease

The following points should be observed to control the hazard of vibration disease:

12.1 7.1 Maintain and checked the fastness of all anti-vibration mounts, absorber, the guide bar and chainsaw body parts.

12.1 7.2 Maintain the correct low and high speed carburettor adjustments.

12.1 7.3 Maintain a firm but not rigid grip on the chainsaw handles.

12.1 7.4 Maintain warm hands.

12.1 7.5 Maintain depth gauge settings and chain sharpening to the manufacturer's recommendations.

12.18 Use of chainsaws above ground.

12.1 8.1 No person shall use a chainsaw for tree work unless they have fully demonstrated their competence and practical knowledge and chainsaw operation and tree climbing.

12.1 8.2 As a guide, the person should have reached the level, of competency in climbing and chainsaw use equivalent to the certificate in arboriculture.

12.1 8.3 All training in the use of chainsaws above ground should be given on a one-to-one basis

12.1 8.4 Where applicable, chainsaws should be a lightweight type, fitted with a top control handle to give good balance and not exceeding the CC rating for the job in hand.

12.1 8.5 The bar length should be kept to a minimum required for the work to be carried out.

12.1 8.6 Where it is necessary to use a large chainsaw because of branch or trunk size, the operator must be in a stable position so that the chainsaw can be operated with both hands. To aid stability and to assist control, large saws should be supported by a rope running to a higher point in the tree.

12.1 8.7 Warm-up the chainsaw on the ground for ease of starting and the tree.

12.1 8.8 Before operating the saw, get securely positioned or above the level of the cut where practicable.

12.1 8.9 Attach the saw to the climbing harness by means of a strop for the general use but not if there is danger of a chainsaw being trapped and taken with the severed section.

12.1 8.10 Start the chainsaw by supporting on a branch, or if this is not possible, position the saw on the other side of the trunk or branch or get in a safe and stable position. Hold the saw wilh straight left arm and start was short sharp pulls of the starter cord. Start the saw with the chain brake on.

12.1 8.11 If in making the cut, the operator has no suitable backrest or something to lean on, they should be secured, if possible, by two anchor points. Footing should be secure on branches or climbing spikes when practicable.

12.1 8.2 Generally, the saw should be operated using two hands. However in some circumstances e.g. cutting ends of long lateral branches, the operator may for safety or feasibility hold the saw in one hand to make the cut.

12.1 8.13 Stop the saw or activate the chain brake while changing working positions.

12.1 8.14 Minor adjustments to the saw may be made in a tree. A major malfunction necessitates lowering the saw to the ground person or returning to the ground to carry out repairs.

13.0 Climbing

13.1 Persons climbing shall be competent and fully trained in the use of climbing equipment.

13.2 Generally at least two persons should be employed when climbing is being carried out.

13.3 Working techniques and progression shall be fully discussed and understood by ground staff before climbing commences. Rescue procedures shall be outlined and understood where appropriate.

13.3.1 A visual hazard assessment on the tree including the rooted area shall be performed prior to climbing or performing any work in the tree.

13.4 Effective communications must be maintained with a climber. Noisy machines which affect communication must be either shut down or moved away. Helmets with built-in radios are a possible alternative.

13.5 The climber shall be securely attached to a suitable anchor point at all times by means of a climbing rope, slings or safety line. The anchor line should be kept taut all times and secured around the main stem or branch.

13.6 Anchor points should be sufficient to take the climber's weight. Be aware that some trees are more brutal and others, e.g. poplars, willows, and select the appropriate diameter. Do not rope onto dead branches.

13.7 Whenever the working position has changed a climbing rope should be rerouted to ensure the free end has a straight fall to the ground. The ground person shall ensure that the rope is free of knots and kinks.

13.8 Supplementary anchor points shall be used where a fall or swing that may cause injury is possible.

13.9 Knots should be untied and never slipped off carabiners.

13.10 When descending ensure that the rope is as straight as possible and use both hands to control a smooth descent.

14.0 Climbing equipment

14.1 Climbing equipment shall be of the highest quality and comply with New Zealand safety standards where applicable

14.2 Climbing equipment must not be used for any other purposes and must be replaced if worn, damaged or inoperative.

14.3 All equipment must be used in compliance with a manufacturer's conditions and instructions.

14.4 Ropes

14.4.1 Nylon climbing ropes must be a minimum of 12 mm diameter

14.4.2 All climbing ropes shall be free of joining splices. Spliced eyes are to have the rope end tucked least four times.

14.4.3 Rope ends should be secured to prevent unravelling

14.4.4 Never use a climbing rope for another purpose.

14.4.5 Coil ropes with the lay of the rope to avoid kinking. Remove any kinks as they occur by working free to the end as the rope is gathered.

14.4.6 Provide a suitable bag or box or hang up climbing ropes to avoid contact with harmful substances or damage while being transported.

14.4.7 When descending with a figure 8, carabiner hitch or other descender the rope should not be allowed to slip too rapidly as friction may burn and weaken the rope.

14.4.8 When ropes are run through crutches, over branches or against bark, they should be moved slowly to avoid friction. Avoid tight crutches.

14.4.9 The working breaking strength of a rope is determined by the knots used to fasten it. Knots must be simple, easily tied and readily untied. The same knots must be used by the climber and ground personnel to avoid confusion. Rope ends of knots should be least 50 mm long.

14.4 .10 Check ropes daily for damage before use. Pay particular attention to cuts or sheath damage as these can be an indicator of damage to the core. Run ropes through your hands to detect damage.

14.4 .11 Replace a climbing rope when:

A) It has been damaged mechanically;

B) It has held a severe fall;

C) It has come in contact with petrol, diesel, grease or acids;

D) It is older than five years.

14.4 .12 Store ropes coiled and hung in a cool and dry place away from sunlight. Provide protection to avoid contact with harmful substances.

14.4 .13 Where possible ropes should be hung in a shady place to dry.

14.4 .14 Dirty ropes should be washed and cleaned in lukewarm water using gentle detergent, rinsed well and hung to dry in a shady place.

14.5 Safety Harnesses

14.5.1 Before use, belts must be checked to ensure that webbing, leather and rivets are in good condition and secured, and rings and clips are serviceable and free from defects or damage.

14.5.2 The most suitable belt for tree work combines a saddle with a waist or body belt which minimises fatigue and allows free movement.

14.5.3 Leather belts should be cleaned with saddle soap and dressed with dubbin after use. Webbing belts can be cleaned by washing in mild detergent, rinsing and hanging to dry.

14.5.4 Safety belts should be kept in compartments or suitable containers while being transported to avoid harmful substances and damage.

14.5.5 Safety belts should be stored by hanging on hooks or pegs in a dry place away from excessive heat or sunlight.

14.6 Tree climbing Spurs

14.6.1 All tree climbing Spurs shall be manufactured from quality materials by competent tradespeople.

14.6.2 Spurs shall be inspected before use for fractures or hairline cracks. Any loose spikes; cut or worn straps; pulled rivets and damaged or worn buckles, rings or pins are to be repaired.

14.6.3 Spikes should be kept properly sharpened, avoid needle points or reducing the cross-sectional area by over filing.

14.6.4 Spurs should be firmly strapped to the climber's feet and legs with the top of the shank fitting firmly and comfortably to the calf just below the knee.

14.6.5 The climber must ensure that when climbing the tree, the spikes are set at sufficient angle to the stem to prevent slipping or gouging of the bark.

14.6.6 When climbing, the safety strap is never unclipped except to bypass branches too heavy to break off. A second safety strap or line should be fastened free of the obstructive branch before the first strap is unclipped.

14.6.7 If Spurs are removed while working up a tree, they should be lowered to the ground to avoid damage to the spikes or danger to the ground personnel.

14.6.8 Climbing Spurs should be worn only when needed and must not be worn when working on the ground, walking or riding and vehicles.

14.6.9 A suitable box or container should be provided for the transportation and storage of tree climbing Spurs. The spikes should be covered to prevent damage to the points and avoid injury in handling or damage to other equipment. Straps and pads require regular maintenance to keep them soft and pliable.

4.7 Ancillary Equipment

4.7.1 All ancillary equipment (eg, carabiners, descenders, rings and webbing etc) used in climbing operations shall be rated to a minimum of 22 kN.

4.7.2 Always use equipment fit for purpose to the manufacturer's instruction.

4.7.3 All carabiners should be locked when in use.

4.7.4 Check ancillary equipment for physical damage such as significant dents or distortion, cracks or forging folds, weak pivots or springs and remove from service if signs of excessive wear or damage are found. Do not modify or repair equipment.

4.7.5 A suitable container shall be provided to protect equipment and prevent contact with cutting tools, chemicals or other hazards while in storage or transit.

4.7.6 Maintain and clean equipment in accordance with the manufacturer's instructions.

15.0 Ladders

Improper use of ladders is a major work hazard. The most common causes of accidents are ascending and descending properly, failure to secure the ladder, holding objects while ascending or descending or structural failure of the ladder.

15.1 Ladders made of metal or other electrically conductive material shall not be used in the vicinity of powerlines.

15.2 Ladders should be inspected regularly for loose cracked rungs or Stiles. Make sure nuts and bolts are tight, locks work correctly, extension of locks work as intended and rope and other accessories are properly fixed and in good condition. Lubricate any moving parts.

15.3 Whenever practicable erect the ladder against the trunk rather than the branches of a tree. Ensure that both stiles are firm and as level as possible, both on the ground and at the top. If work is going to be carried out from the ladder or repeated climbing or long use is envisaged, it must be secured at the top.

15.4 When using ladders on concrete or metal surfaces make sure that nonslip feet or a stabilised base is fitted. If the base cannot be adequately secured a person must hold the ladder to prevent movement or the bottom of the ladder is to be secured by a rope at the base.

15.5 Leaning ladders must be positioned in a safe manner. As a general guide, the distance from the ladder base to the vertical support should be one quarter of the working length of the ladder.

15.6 The unsupported part of the ladder must not touch any obstructions.

15.7 With extension ladders ensure that:

15.7.1 Ladders of less than 18 runs per section have at least two rungs overlap;

15.7.2 Ladders with 18 runs or more per section have at least three rungs overlap

15.8 Always remove an extended ladder from a tree either with help or by lowering using a rope tied to the top of the ladder and passed over a branch or through at short strop and pulley.

15.9 Always face the ladder and use both hands to hold on during ascent and descent

15.10 Do not allow more than one person on a ladder at any one time.

15.11 Do not overreach when working from a ladder.

15.12 Do not use ladders as bridges or inclined planes to load or handle logs or other materials.

15.13 Do not step from one ladder to another.

15.14 Never walk a ladder while standing on a ladder.

15.15 Never used temporary supports to increase the length of a ladder or fasten ladders together to increase their lengths unless expressly designed for the purpose.

15.16 Sectional ladders

15.1 6.1 Sectional ladders should be tested for good fit before a climb is commenced and be numbered to maintain order.

15.16 .2 Each section of sectional ladder should be secured around the tree by chain and a suitable catch provided to ensure tightness all times

15.1 6.3 Sectional ladders shall not exceed 3 m in length per section

15.17 Ancillary equipment

15.1 7.1 All carabiners, the descenders/ascenders, rings, strops and other ancillary equipment used in climbing operations shall be proof tested to 2200 kg rating and marked with this information and the safe working load.

15.1 7.2 Always use equipment to manufacturer's instructions.

15.1 7.3 Maintain equipment by keeping a clean at all times. Carabiner locking screw and hinges shall be oiled occasionally to ensure their free operation.

15.18 Orchard ladders

15.18.1 Always make sure an orchard ladder has sideways stability

15.18.2 On hard surfaces the pole will need to be lashed to ensure it will not slip

15.18.3 Ensure material being cut will fall away from the operator and will not knock the ladder to an unstable position

16.0 tree Pruning

Effective communication shall be established between the arborist in the tree and the ground crew before cutting and/or dropping branches.

16.1 Generally, and in a climbing situation, the operator should be positioned above the branch to be removed.

16.2 Where there is a likelihood of the branch kicking back or striking the operator, the operator should move to a safe position prior to the severing cut.

16.3 Heavy branches should be removed in sections and lowered with ropes. To avoid tearing and damage to the tree or danger to the operator, the final cut should be undercut.

16.4 Generally, two ropes are sufficient for guiding and lowering large branches. One rope is tied to the branch and passed over an anchor is directly above as possible. The rope is then tied off or held by a ground person. A pulling off rope is attached further out on the branch. Arborist climbing lines and lowering lines shall not be run through the same crotch.

16.5 Three ropes may be necessary to larger branches. Butt and top ropes hold the branch until it is cut and ready to be lowered. The third rope is used as a guide rope to control the branch and bring it to the desired position.

16.6 Under no circumstances shall partially cut branches be allowed to remain overnight. If work is not completed at breaks or lunch breaks, the danger area below the branch must be treated as dangerous.

16.7 Hand Saws

16.7.1 Always keep blades properly sharpened

16.7.2 The free hand should be held clear of the saw and cuts are to be made way from the body.

16.7.3 Handsaws should have a suitable guard or scabbard complete with some means of attachment to the worker's belt for working aloft.

16.8 Pole pruners

Manual pole pruners, pole saws and other similar tools with poles made of metal or other conductive material shall not be used in where there are electrical hazards from power lines.

16.8.1 When poll pruning, the operator should wear a safety helmet with a suitable chin strap or combination earmuffs which hold the helmet firmly in position.

16.8.2 Workers must be at least 1.5 pole lengths apart while working

16.8.3 Never stand directly under limbs being pruned and stand up wind to avoid windblown sawdust

16.8.4 If raising or lowering pole pruners for tree work, attach a rope to the end of the tool so it is less likely to be caught in branches.

16.8.5 When raising or lowering pole pruners with cutting jaws, the rope must be attached below the cutting jaws and not tied to or run through the jaws to eliminate cutting off the rope

16.8.6 Always carry pole pruners with the saw or jaws pointing forward and walk at least 1.5 times the pole lengths away from other workers.

17.0 Tree felling

Preparation for tree felling:

Before beginning any tree removal operation, the chainsaw operator and/or crew leader shall carefully consider the following conditions to eliminate, isolate or minimise any potential hazards. The planning process to address tree and site factors shall identify appropriate actions to ensure a safe removal operation.

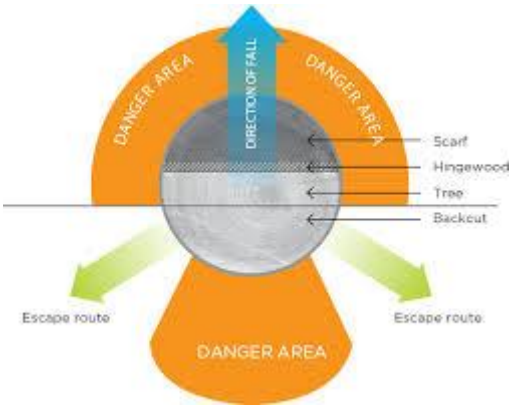
This should include the shape and condition of the tree, lean of the tree, windforce and direction, broken branches and deadwood.

17.1 All felling operations shall be under the direct control of a competent person fully experienced in the kind of work to be undertaken. The person in charge of felling operations shall exercise control and supervision of the work to ensure adequate safety precautions are being observed.

17.2 Special care should be taken when felling dead trees, as parts may fall into the work area as a tree falls.

17.3 Before felling commences, a careful check should be made to ensure that there is no danger that the material, branches or dead tops may be dislodged and fall into the work area. If required, an observer should be present to warn the feller of any danger.

17.4 Provide an adequate workspace and clear escape route. The escape route shall be diagonally to the rear at approximately 135° from the direction of the fall. If this is not possible, it shall be as close as practicable to the diagonal into the side and rear.



17.5 The escape route shall be kept clear of tools and other material that would impede a quick exit.

17.6 Particular care should be taken when felling uphill is as it creates extra hazards with trees likely to roll or slide back towards the operator.

17.7 People not assisting with a felling operation, unless supervised under training, training others or authorised by the person in charge, shall remain a safe distance of least twice the length of the tallest tree being felled. On steep slopes this distance shall be, if necessary, increased to suit the circumstances. Fellers and feller observers shall ensure that the safety area is maintained.

17.8 Every feller should have with them either:

17.8.1 At least two wedges suitable for the size of the tree being felled and a suitable tool for driving those wedges; or

17.8.2 For small trees, a felling lever or some other felling tool suitable for the size of the trees being felled.

17.8.3 A pulling line should be attached to all trees and stems being felled to provide directional pull where assisted directional felling is required. Machines or ground workers operating the pull line must be at least two tree lengths from the direction of the fall of the tree.

17.9 Where a tree is “hung-up” or “cut-up” it shall be brought to the ground as soon as possible, and before operations continue. A hung-up or cut-up tree shall not be left standing, nor shall the feller leave the area before the tree has been brought to the ground, other than to seek assistance to do so. The person in charge shall be notified and additional precautionary planning done.

17.9.1 No person shall move forward within two tree lengths of the intended direction of fall of any hung up or cut up tree, or the direction of fall of any hung up tree.

17.10 No machine shall operate within two tree lengths of any felling operation while felling is in progress, or forward of any hung up or cut up tree, unless to assist, under adequate supervision, and safely bringing the tree to the ground.

17.11 Trees that are within two tree lengths of road and rail traffic shall not be felled unless suitable precautions had been taken to warn oncoming traffic. Such precautions shall include the posting of warning signs and where necessary, the placement of flag men the appropriate safe positions.

18.0 Section felling

This operation involves the removal of trees by manageable sections where the situation does not allow felling by conventional techniques.

18.1 No person shall carry out section felling unless they have fully demonstrated their confidence and knowledge of section felling techniques.

18.2 Clear communication between climber and ground staff must be maintained to ensure an understanding of what is happening or what is required any given time.

18.3 The climber must ensure a safe working position is adopted prior to any cuts being made

18.4 In roping down and slinging, the weight of the sections to be removed should be carefully assessed to ensure the selected ropes have the capacity to adequately cope with the initial fall and consequent retention of the section.

18.5 When lowering sections by rope, it is important to control the descent by using appropriate anchor points to act as friction device as if required. Provision must be made to avoid damage to the bark and cambium where other trees are used for this purpose.

18.6 We sections are to be removed by hand they should be under the control of the operator before there descent to the ground.

18.7 blocking and clearing debris

18.7.1 ground staff trimming large branches or logs must ensure they have firm footing and will not slip and that no part of the tree will fall towards them after making a cut.

18.7.2 special care should be taken on slopes to ensure that no part of any tree or debri will roll or fall towards them or others working around them

18.8 **Wire rope**
All wire ropes shall comply with *NZS/BS 302 Part 5 Specification for ropes for hauling purposes*. No wire rope shall be used in an arboriculture operation unless the manufacturer or vendor has certified it as to its breaking strength.

18.8.1 Eye-to-eye splices shall not be made in any pulling or lifting rope. Only long splices or butt splices are to be used in joining such ropes.

18.9 Winching

18.9.1 Hand winch, machine winch and hauling machine operators shall be competent and conversant with all facets of winching operations.

18.9.2 Where two persons have applied the load to a hand winch handle or lever, two persons shall be used to release the load.

18.9.3 The tree feller shall, before felling commences, advise winch and machinery operators as to what is required in terms of line tension, winching and pulling speeds. Visual signals and vocal commands shall be determined before felling starts.

18.9.4 When using a stump as a ground anchor or to secure pulling blocks, the stump shall be of sufficient size and stability for the winching operation. Strops used to anchor winches or pulling blocks shall be at least 1.5 times the SWL of the pulling rope.

18.10 Windthrow

Windthrown trees are those that have been blown down, have become unstable or have been significantly damaged by wind action. These provide additional hazards that require having more than one person working on the site at all times.

18.10.1 When a tree is resting on its upturned roots the worker shall ensure that the cut is made in such a manner that neither the feller nor other workers are in a position of danger from movement of either the root mat or the log.

19.0 Chipper and Grinder operation

General rules regardless of model of chipper or grinder

All persons operating chippers and or stump grinders shall comply with the manufacturer's instructions. All chipper and grinder equipment shall be equipped and maintained with all manufacturer's safety devices, instructions, warnings and safeguards. Arborists and other workers shall follow instructions provided by manufacturers.

19.1 Operators must be appropriately dressed with:

19.1.1 No loose clothing or jewellery and confine long hair;

19.1.2 Approved ear and eye protection;

19.2 Ensure the public are excluded from the work area.

19.3 If the chipper is unhitched from the tow vehicle it must be on firm level ground with the wheels chocked. If appropriate and fitted the brake should be activated.

19.4 Avoid rotating knives or feed rollers

19.4.1 Do NOT climb on the feed table

19.4.2 Do NOT put hands near feed rollers or knives

19.5 Check material being chipped. Never throw in materials which might contain wires, stones, nails or other metal objects which may damage knives and become dangerous projectiles

19.6 Stay away from the front of the chute while the cutter drum is turning. Material coming out of the chute can cause injury and blindness.

19.7 Avoid working in an enclosed area. Exhaust fumes can be fatal.

19.8 The following start procedure for the chipper must always be followed:

19.8.1 Check fuel level

19.8.2 Check belt tension is off on that start lever is in the start position.

19.8.3 Check the feed rollers are in neutral and feed chute is empty.

19.8.4 Start engine and allow to warm up

19.8.5 Slowly engage belt tensioner and engage full throttle.

19.8.6 Engage feed rollers

19.9 chipper feeding

19.9.1 Only trained operators are to feed the machine.

19.9.3 Stand beside the chute to feed

19.9.4 Do not place arms inside the chute

19.9.5 Use a piece of branch to push loose or jammed material.

19.9.6 Do not feed with your feet

19.9.7 If material being chipped catches clothing or hands immediately activate the reversing bar to stop the feed

19.9.8 Do not overload the machine

19.9.9 Do not leave the machines running unattended

19.9.10 shut the engine down when clearing any clogging

19.9.11 if the machine noise changes investigate the cause.

19.10 Grinder operations

19.10.1 all operators will comply with the manufacturers safety instructions

19.10 2 stones or metal any other hard object likely to be thrown back from the machine should be removed prior to starting a job.

20.0 Mobile plant

20.1.1 Seatbelts shall be worn at all times on all mobile plant.

20.1.2 Where there is a provision for doors (hinges, door jams, and latches), doors shall be fitted and closed while the plant is in use.

20.1.3 Mobile plant required to work at night shall be equipped with working lights to illuminate the work area.

20.1.4 Mobile plant with any structure that may come in contact with overhead power lines shall have a warning sign displayed in the cab.

20.1.5 Mobile plant shall be equipped with a braking mechanism capable of holding itself and its load on any slope on which it is operated.

20.1.6 All pulleys, shafts, and belts shall be guarded to the minimum original manufacturer's specifications.

20.1.7 Where operating noise levels may cause damage to hearing an ear protection warning sign shall be displayed.

20.1.8 Vehicles/mobile plant used for forest operations shall display a valid Warrant or Certificate of Fitness if they are to be used on a public road.

20.2 Using mobile plant

20.2.1 Mobile plant and machinery shall be operated to the manufacturer's specifications.

20.2.2 Where the stability of mobile plant is compromised by slope, weather or ground conditions then a specific hazard management plan shall be developed, implemented, and monitored.

20.2.3 Mobile plant shall not be operated on slopes that exceed the maximums in accordance with the manufacturer's specifications (or their agent).

20.2.4 Operators of mobile plant shall hold a valid licence with a special type endorsement if operating on a public road.

20.2.5 No person shall:

A) Get on or off moving mobile plant
B) Ride on mobile plant not provided with proper seating
C) Ride on a load carried or towed by a mobile plant.

20.2.6 Mobile plant cabs shall have all objects secured.

20.2.7 When mobile plant is shut down or left unattended with the engine running:

A) brakes shall be applied where fitted

B) blades and accessories shall be resting on the ground.

20.2.8 The mobile plant operator must remain in the cab if operating closer than two tree lengths of tree felling

20.2.9 Any piece of mobile plant that becomes unsafe, or is suspected to be unsafe, shall be shut down and secured. The mobile plant shall be inspected, repaired and tested before returning to service.

20.2.10 Emergency exits shall not be hindered by protective structures.

20.2.11 Mobile plant operators shall ensure people are clear before slewing driving or positioning mobile plant. They must also ensure that people are clear before moving any stems, logs or logging debris.

20.2.12 Mobile plant shall be stopped, and have the brake applied, before anyone approaches to unhook a drag.

21.0 Mobile elevating work platforms (MEWP)

21.1.0 General provisions

21.1.1 All mobile elevating work platforms used shall have an engineer's certificate stating the work and loads that particular platform is capable of and that it meets the requirements of the *Best Practice Guidelines for Mobile Elevating Work Platforms*.

21.1.2 All work platforms shall be visually inspected and checked in accordance with the manufacturer's instructions prior to daily use.
21.1.3 Work platforms shall be operated by a competent operator and in accordance with the manufacturer's instructions and the *Best Practice Guidelines for Mobile Elevating Work Platforms*.

21.1.4 All elevating work platforms shall be provided with a point of attachment to secure a fall-arrest harness with a shock-absorbing lanyard. Operators working from an MEWP shall be tied in at all times while aloft.

21.1.5 Elevating work platforms shall not be used as cranes or hoists to lift or lower materials unless specifically designed by the manufacturer to perform such operations.

21.1.6 Operators shall not exceed the SWL of the platform.

21.1.7 Elevating work platforms shall not be used within the vegetation management zone without written consent from the power line owner (Avoiding electrical hazards.)

21.1.8 Do not use the platform over workers or allow workers access under the platform.

21.1.9 A chainsaw shall not be started inside a bucket or platform unless a fixed starting bracket is fitted to the bucket walls or platform guardrails, so that the bar and chain are outside the working area when the saw is started. Otherwise, the saw shall be warmed up on the ground and started outside the bucket.

21.1.10 Where two workers may be operating from a bucket, only one chainsaw shall be operated at a time with the second worker remaining clear from the chainsaw worker.

21.2.0 When using an MEWP for tree access and egress, operators may use work positioning harnesses incorporated with a travel restraint system. Transfers between elevated buckets and other work positions (trees) aloft are discouraged. Other access methods that eliminate fall risks should be used where practicable. However, where such transfer is essential for the work, the transfer shall be managed and fall protection provided.

The following minimum guidelines apply.
Pre-operation

21.2.1 The transfer is planned and the climber, MEWP operatorand other work team members are prepared for it.

21.2.2There is an alternative means of descent available from the external work position (tree).

21.2.3 The proposed transfer point to the external work platform or other work position (eg, tree foot/hand hold point) is well within the vertical and horizontal reach of the MEWP bucket.

21.2.4 The MEWP is checked as being stable for the transfer and the extent of any boom deflection is anticipated in the transfer.

The transfer process
21.2.5 The bucket floor is displaced no more than 300 mm vertically from the standing or foothold surface of the external work position (tree) during the transfer, and, if the bucket is positioned adjacent to the external work position (tree) the horizontal gap between the two should be no more than 100 mm.

21.2.6 Attaching and detaching height safety equipment during the transfer is always done from the work position within the bucket. The process requires the anchor point in the tree to be installed and set then attached to the harness immediately, followed by the removal of the MEWP attachment.

22.1.0 Cranes and related hoists

21.1.1 Riding the load line of a crane while it is under load tension shall be prohibited.

21.1.2 A qualified arborist may be hoisted into position utilising the crane, provided that he/she is tied in with an arborist climbing line and arborist harness and secured to a designated anchor point on the boom or line.

The following procedures shall be followed when an arborist is to be lifted by a crane.

21.1.3 The person specifically responsible for the work shall authorise the use of a crane only when he/she has determined that it is the safest and the most practical way to perform the work or gain access to the tree. Such authorisation should be made in writing and be retained at the job site.

21.1.4 The crane operator shall be familiar with the potential hazards and operational techniques encountered in tree work.

21.1.5 The arborist climbing line shall be secured to the crane in such a way that it does not interfere with the function of any damage prevention or warning device on the crane, and so that no part of the crane compromises the climbing line or any other component of the climbing system.

21.1.6 The arborist shall check for any sprags on or near the point of attachment that may damage or compromise the function of the climbing line.

21.1.7 The crane operator and the person responsible for the work to be performed shall meet prior to the work to review procedures to be followed. If the work involves a signal person and/or arborist being lifted in addition to the person responsible for the work, they shall participate in the review.

21.1.8 Communication between the crane operator and the arborist being lifted shall be maintained either directly or through the appointed signal person.

21.1.9 The crane shall be supported on a firm surface and maintained in a level position. The crane operator shall use blocking or other means if necessary so that the support medium does not exceed its load-bearing capabilities. When provided, outriggers shall be extended and properly set. Lifting of arborists shall not be permitted when the crane is supported solely on its tires.

21.1.10 The crane operator shall test the adequacy of footing prior to any lifting. The lifting and supporting shall be made under controlled conditions and under the direction of the arborist or an appointed signal person.

21.1.11The crane operator shall remain at the controls when the arborist
is attached to the crane.

21.1.12 The crane boom and load line shall be moved in a slow, controlled, cautious manner with no sudden movements when the arborist is attached. The lifting or lowering speed shall not exceed 0.5 metres/second. The crane shall be operated so that lowering is power-controlled.

21.1.13 The crane carrier shall not travel at any time while the arborist is attached.

21.1.14 Cranes shall not be used within the vegetation management zone without written consent from the power line owner.

22.1.0 Helicopters

22.1.1 A briefing on safety between the pilot, controllers and workers shall be held before operations commence.

22.1.2 Procedures shall be established before operations commence to ensure that alternative communication methods are available should radio communication fail or become unclear.

22.1.3 Hand signals shall be in accordance with the instructions issued by the pilot.

22.1.4 Strops or taglines used shall have an ultimate breaking strength three times their safe working load and shall be regularly inspected for wear.

22.1.5 Any worker shall wait for a signal from the pilot before entering, leaving, loading, unloading connecting or disconnecting anything from a helicopter.

22.1.6 All workers shall:

A) remain clear of the immediate vicinity of a helicopter that is hovering (unless unavoidable)

B) keep clear of the rotors

C) stay in full view of the pilot (ie, stand forward of the helicopter)

D) not approach or leave a starting up or closing down helicopter

E) not approach a helicopter from the downhill side

F) not go near the rear of the helicopter.

22.1.7 Operations involving suspension of persons below the helicopter, including injured persons, shall be conducted in compliance with Civil Aviation Rule 133.

22.1.8 While riding in the helicopter, seat belts shall be fastened until the pilot signals for passengers to exit.

22.1.9 Where safety helmets are worn in helicopter operations, they shall be provided with a means of preventing them from being blown off such as a chin strap or by wearing ear muffs attached to the helmet.

Accident reporting part four

As required under the provisions of the Department of labour the following shall apply for all accidents

An approach to accident investigation

1. Who should investigate?

Only people with the appropriate skills and experience should investigate accidents.

If there were serious harm or the potential for it, and there is a likelihood of a recurrence, a group approach to investigation should be justified. It will bring a range of skills and perspectives to bear.

2. Gather the facts

What happened? Interview witnesses and describe events in detail, using any photos, diagrams or other exhibits that may be appropriate.

Has a prescribed accident report being completed and OHS, or any other agencies been informed?

Be sure you understand the sequence of events fully before any analysis takes place.

3. Identify all the hazards involved. Consider:

Equipment, materials etc. Work practices and procedures. The work environment. Health issues.

4. Assess the hazard controls in place

What controls were in place, and why do they work?

What is needed?

Is there a need to train or inform employees?

5. Decide on future action.

Describe fully what needs to be done to prevent further accidents or incidents.

Who should do what, and by when?

6. Informal all those affected

Inform everyone who needs to know, not only those directly involved.

This is likely to involve circulating your report, or a summary of its findings.

7. Follow-up

There must be checks to ensure that recommended changes have been made and results achieved. This relies on me as being in place to ensure people are accountable for their actions, or lack of actions.