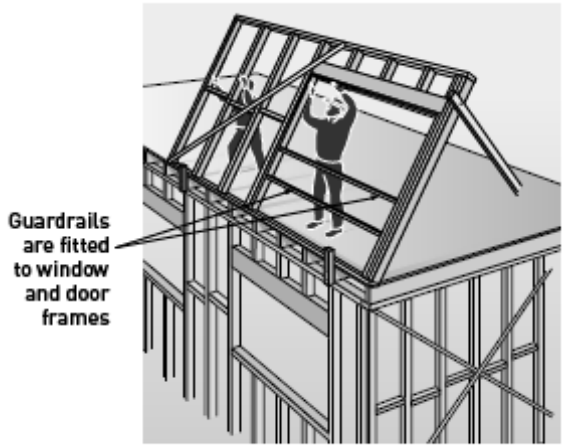
Safe Work Method Statement – Work at Heights

This safe work method statement is generic in nature. All PCBU's when undertaking high risk construction work are to have in place a Safe Work Method Statement (SWMS). This SWMS can be used as a guide in developing your SWMS. Where there are differences in the control measures to employed between your and this SWMS the higher of the two control measures are to be implemented – this or your own SWMS. This SWMS needs to be reviewed against site conditions upon commencing work. Where site conditions prevent works to be carried out in accordance with this SWMS than another is to be written and Site Supervisor notified.

Name of PCBU/Employer		**Name of Principal Contractor**	Bay Building Services		
Work Activity:	Working at height and Being Struck by Falling Objects	**Work Location:**			
High Risk Construction Work:	Hazards : Fall from height, struck by falling object	**Site Supervisor**			
		Emergency Contact:	1300 766 216	**Contact No**	
Have workers been consulted about the SWMS?	All workers are required to be consulted with regards to the SWMS and control measures contained in the SWMS.				
Person Responsible for ensuring compliance with SWMS	Different PCBU's/Employers and Contractors will encounter different High Risk activities. All PCBU's/Employers are responsible for reviewing this SWMS against site conditions and ensure work occurs in accordance with the SWMS.				
Person(s) Responsible (for reviewing the SWMS)	PCBU's/Employers should review this SWMS and apply the control measures outlined for the various High Risk activities that they may undertake. Where works can not occur in accordance with this or your own SWMS contact is to be made with the Site Supervisor.				

Work Step	**Hazard for Works**	**Control Measures for the Hazards**
Pre-Start Check at Site	Site hazards may impair works	• Undertake pre-site inspection verify conditions on site will enable works to be carried out in accordance with the SWMS. • Discuss site specific works with the Site Supervisor reviewing site signage, Safety Management Plan, for site specific hazards • Ensure all employees are made aware of any site specific hazards to works and this SWMS • If SWMS are to be changed copy is to be provided to site supervisor and workers made aware of the changes
Use of Scaffold	Fall's from height	**Scaffolding**

		For fall-heights >2 m, the installation of heavy duty scaffolds with kick boards & mid rails installed by licensed scaffolder is common on construction sites. The scaffolder must supply a certificate of completion (ScaffTag) that verifies completion of the scaffold to Standard. No work is to be carried out (other than that of installing and dismantling of the scaffold) from the scaffold unless the scaffold, or the relevant part or portion of the scaffold, is complete To prevent collapse, do not load platforms with more than 650 kg per bay. No scaffold alterations, except by licensed scaffolder. Any fault or non-compliance shall be reported to the Supervisor. Platforms only to be accessed by stair or ladders. Where this is not practical access maybe gained through a window as long as the step down from the window ledge is no more than 500mm. Scaffold is to be maintained so that it's meets compliance with the installer's guidelines. All trades are to ensure that the scaffold is maintained if they are to use it as part of their work. Where defects are noted such as missing hand rails, toe boards, or mid-rails report these to the Supervisor. Trades should never remove scaffolding components to the leave the scaffold unsafe, which includes handrails, tow boards, braces or tie bars.
Erection of Scaffold Safety	Personal injury. Falls. Electrocution Scaffold overturn Incorrect Assembly of scaffolding. Insufficient planks. Mismatched parts. No guard rails. Fittings unsecured.	**Training:** • Only personnel with a high risk scaffold licence are able to install scaffold in excess of 4m in height • Competent and trained personnel are to install light duty scaffold below 4m in height **Foundations:** • Scaffolding foundations MUST be able to carry and distribute all the weight of the scaffold, including any extra loads. • Unstable surfaces such as loose, disturbed ground, and filled areas may require the use of sole boards and base plates to evenly distribute the load of the scaffold to the supporting surface. The sole plates are to be made of hardwood and measure 400mm x 200mm. Base plates are to be centred on the sole boards **Ensure:** • Scaffold is positioned where it will not be struck by site traffic. • Scaffold is not positioned where it may enter the scaffold no go zone around overhead power lines – 6m from the power lines. **Fall prevention controls:** Fully decking each lift by: ➢ Positioning a full deck of planks least 450 mm wide at each lift. ➢ Positioning planks on the next lift whilst standing on a full-decked platform. ➢ Leaving each lift fully decked in place until it is dismantled. ➢ Installing internal guard rails where adjacent structure is still to be built. ➢ All fittings should be securely tightened

		Notes: **Components -** All scaffold components should be installed as the scaffold is erected. For example, the installation of: (a) all bracing and ties; and (b) guy ropes or buttresses. **Ladders to be used must be:** • Installed inside the scaffolding. • Of a commercial quality. (ie not domestic). • Secured at both the top and the bottom. • Elevated at a correct angle. (eg - 4 high to 1 across the base.) • Extended a safe distance above the landing level. (Ensures safety when climbing or descending as people have something to hold onto.) Free from damage. (If they have been damaged they must be replaced.)
Fall through window openings	Fall from height	*Guardrails for Window and Door Openings in External Wall Frames where fall > 2m* • Window and door openings in external wall frames with a fall height >2m (both on first floor & second floor) are to be fitted with guardrails before the frames are raised. The handrail shall be set at approximately 900mm to 1100mm from the floor and the mid rail 500mm. • Additional guardrails are required in window openings and door openings when work is being carried out on a trestle scaffold or ladder. Standard height guard rails are too low to prevent a person from falling through the window or door opening whilst working on a trestle scaffold. Additional guard rails are to be installed at 450mm centres from the first guard rail set between 900mm and 1100mm. - Where guard rails are not in place and works are occurring near to open window openings contact is to be made with the Site Supervisor  **Figure 16** Erecting upper level wall frames

Use of ladders	Fall from height	**Ladders** Ladders are at times a practical tool to gain access to heights for short durations or places where access can not be gained by any other means. General guidelines for the safe use of ladders are as follows: ▪ A person should always have two hands free to ascend and descend a ladder (i.e. all material and tools which cannot be safely secured from the worker's belt should be independently transferred or hoisted to the work location). ▪ Ladders are to be secured against movement and are to be supported on a firm level and non-slip surface. ▪ All work from a ladder should be performed while facing the ladder. ▪ A person's feet should not be higher than 900mm from the top of a ladder. ▪ There should be no danger of any plant coming into contact with a ladder. ▪ No person on a ladder should work over another person. ▪ Only one person should be on a ladder at any time. ▪ Ladders should not be used in access areas or within the arc of swinging doors. ▪ Work involving restricted vision or hot work (such as welding or oxy-cutting) should not be performed from a ladder. ▪ Ladders should not be setup on scaffolding or elevating work platforms to gain extra height. ▪ Small, light loads of tools or materials easily handled by one person only may be raised or lowered with a hand line or carried on a waist belt. ▪ Ladders should not be handled or used where it is possible for the ladder or the user to come into contact with electrical power lines. Metal or metal-reinforced ladders should not be used in the vicinity of live electrical equipment. Such ladders should be permanently marked in a prominent position with "DO NOT USE WHERE ELECTRICAL HAZARDS EXIST", in accordance with Australian Standards. Fiberglass or non conductive ladders are to be used for all electrical work ▪ The use of power tools on a ladder should be restricted to those which are easily operated one-handed *Single and Extension Ladders (see following diagram)* Single and extension ladders are to: • Be placed at a slope of 1:4, • Extend 900 mm above the stepping off point. • Be footed and/or secured at top.

Stepladders

- Stepladders should only be used in the fully opened and locked position.
- A person's feet should be no higher than the third tread (900 mm) from the top plate.
- A stepladder shall not be used near the edge of an open floor or penetration where, if the ladder toppled, a person could fall over that edge.
- Work should not be carried out on ladders unless the task is minor

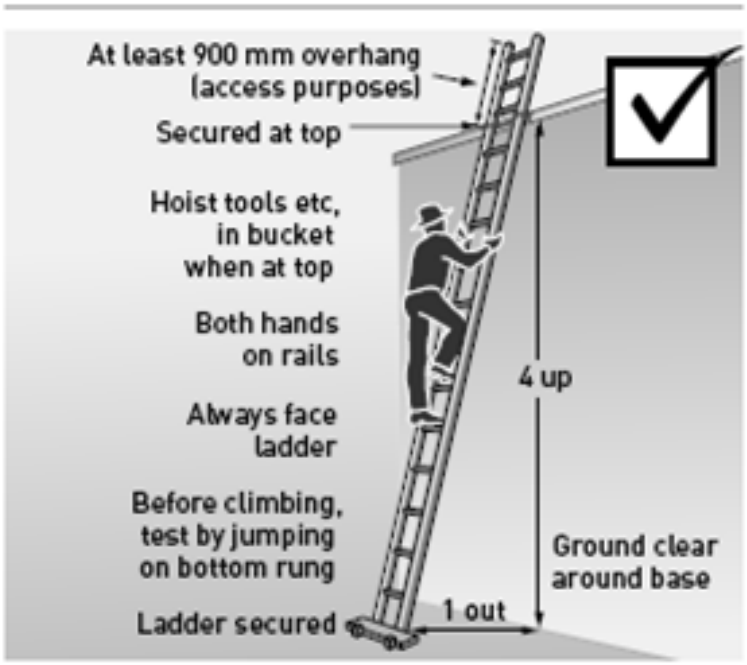
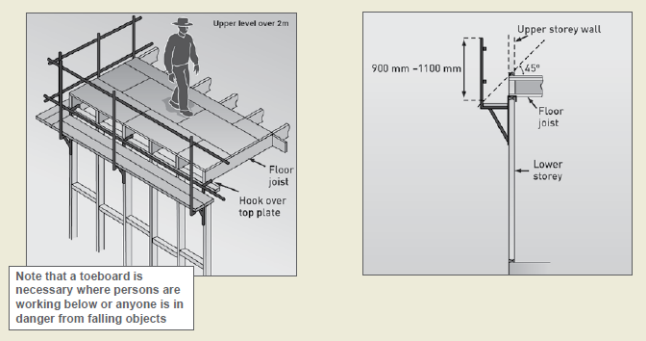
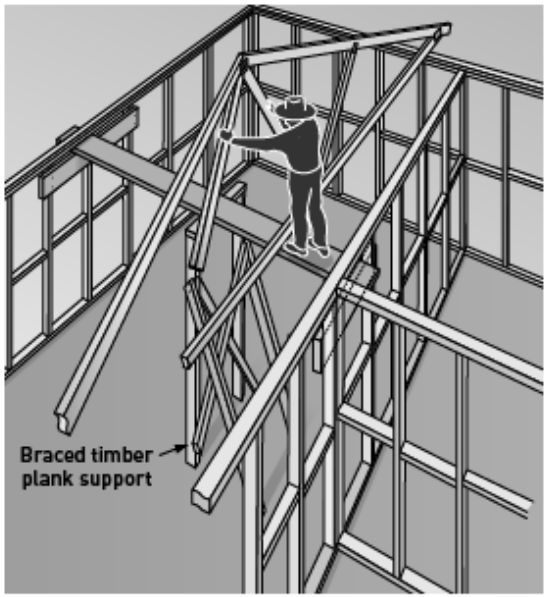
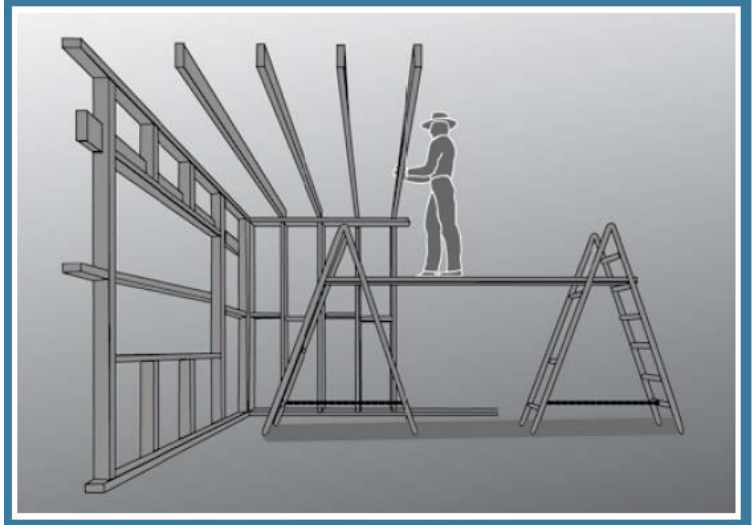


Figure 8 Example of acceptable ladder use

Work on, around, or above void opening	Fall from height	**Void Protection**  Void platforms are installed to cover openings such as stair voids, veranda porticoes, and swimming pool cavities. Access through the void is gained via an opening to accommodate an Industrial Grade Ladder; the opening must be kept closed at all times unless being accessed. The void protection for the first floor is installed prior to the laying of flooring and the erection of the 2nd floor wall frame. If the void is not installed at this time contact is to be made with the Supervisor for installation. Work should not commence until the void is in place. Where void protection can not be installed guard railing can be installed around the void in the following manner after consulting the Site Supervisor: • Using a proprietary method of edge protection guard railing • incorporate a top-rail 900–1100 mm above the working surface • if works occurring above void (e.g. roof work or truss install) a platform must be installed. a top-rail 900–1100 mm above the working surface If the void requires modification due to construction issues contact must be made with the Supervisor.
Works on or edge of structure with unprotected edge		***Fall from edge of the structure*** Where the potential fall is reasonably likely to cause injury, adequate protection, such as edge protection, must be provided. This may be achieved using external scaffolding or guard railing. In the case of first floor edge protection this is to be in place prior to the laying of flooring. 

Roof Truss Instalaltion – Single Storey House Construction	Fall >2m	Truss installation poses a risk of fall when working above 2 metres in height. The erection of trusses maybe undertaken from internal wall top plates or from scaffold planks supported on internal wall top plates providing: • No person works closer than 1.5 metres to the external wall, including gable end walls • Planks are adequately supported across their spans • No person is exposed to the risk of a fall into a stairwell or other void. *Single Storey Houses* Once wall frames are erected, roof trusses are to be installed using either of the following methods: Either: • Working off an approved external hanging bracket system using planks and fitted with a handrail, mid-rail and toe board complying with the Code of Practice. Where the plank is located at a height of less than 2 metres, no guard railing is required. • By working from suitable trestles, or stepladders and planks set up on the slab. The work may also be done solely from a suitable industrial grade stepladder as long as the worker does not work at a height greater than 2 metres above the concrete slab. Or: • By securely nailing a cleat across between two studs on the internal walls, where they join external walls, 1200 mm down from the top plate i.e. at the level of the noggin, and  **Figure 19** Truss erection – Internal support

		resting one end of the plank on the cleat and the other end on a stepladder. Planks shall not exceed the following spans without being supported where they overlap. - 38 mm thick = 1.5 metres - 50 mm thick = 2.0 metres - 63 mm thick = 2.5 metres Where planks have to be supported to meet these span requirements, the support shall be sufficient to carry the required weight and shall not be accidentally dislodged once in place
Frame & Roof Truss Installation Double Storey Hosue		*Double Storey Houses* • Second floor joists are to be installed off trestles and planks set up on the slab or lower floor. Any opening in windows or voids where there is a fall risk >2m must have either guard railing or fully enclosed platform installed. **FIGURE 12** Installing ceiling or upper level floor joists 

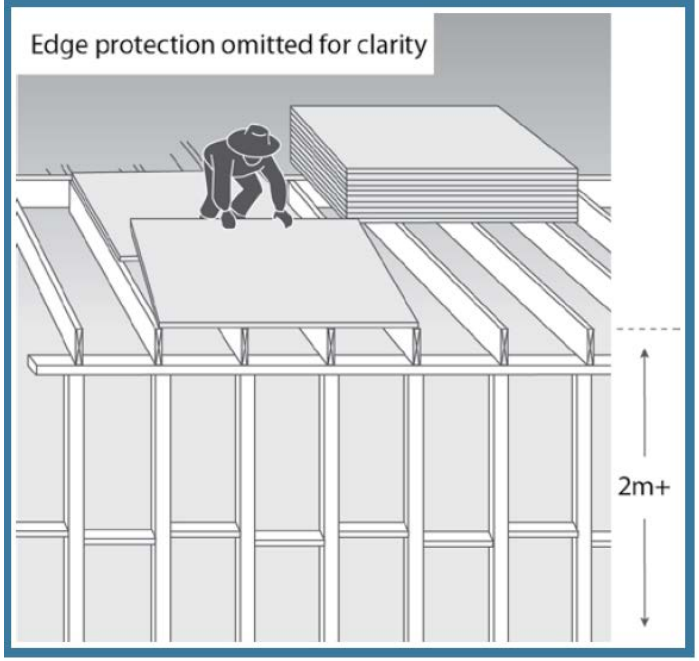
- Void protection is to be installed prior to the laying of flooring and before second floor framing is constructed and lifted into place. It is not acceptable for the framer to start work on the second floor framing whilst waiting for the void to be delivered, the void <u>must</u> be installed <u>before</u> any work on the second floor commences.

- First floor edge protection is to be installed.

- A section of sheet flooring shall be installed along the edge closest to the access point. It is not acceptable or safe for carpenters to work off the open floor joists. Where it is not possible for the flooring pack to be delivered close to the access point an experienced tradesperson may access the pack via walking the joists and lay the first sheet.

- Once the first section of flooring has been secured the remaining sheets shall be lifted on to the first section and installed from the sheeted side across, always working off a secured sheet.

FIGURE 9 Laying sheet flooring at upper level

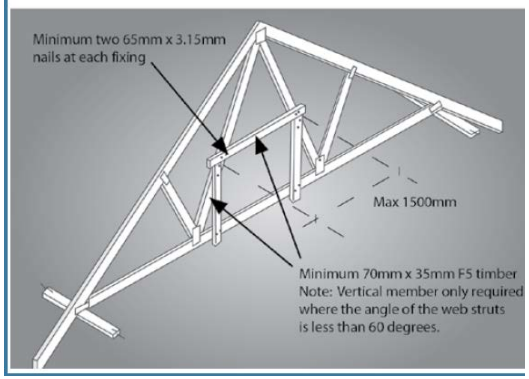


- When frames have been assembled on the first floor they shall be lifted into position and braced. Workers must ensure they remain behind the frame as it will provide a measure of protection against falls. All sections of the frame shall then be nailed off and secured.

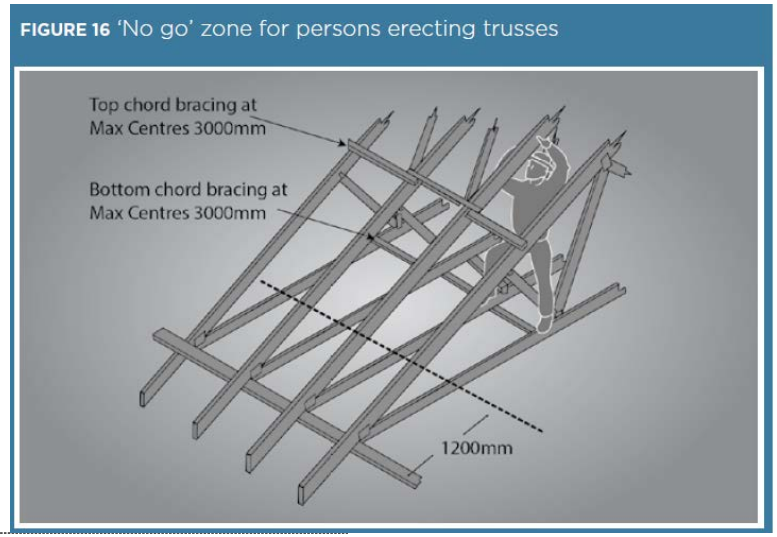
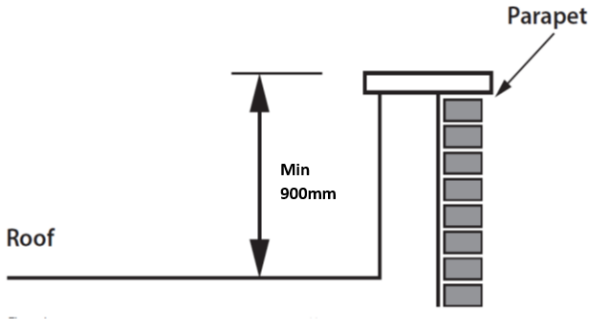
- Once the form bearers are in place the roof trusses may be lifted into position, propped and secured. When installing roof trusses on second storey houses, no person is permitted to walk on or work from the exterior top plate or work closer than 1.5 metres from the edge of the structure. Positioning and nailing off of the trusses on the external top plate shall be carried out off ladders or trestles erected safely within the framing or where a suitable and approved guard railing or top hung bracket system comprising a handrail, mid-rail and toe board has been installed.

- To access the apex or high bracing points the fixing of waling plates for standing or supporting temporary platforms at the appropriate heigh to reach apex or high points.

FIGURE 17 Suggested method of fixing temporary waling plate

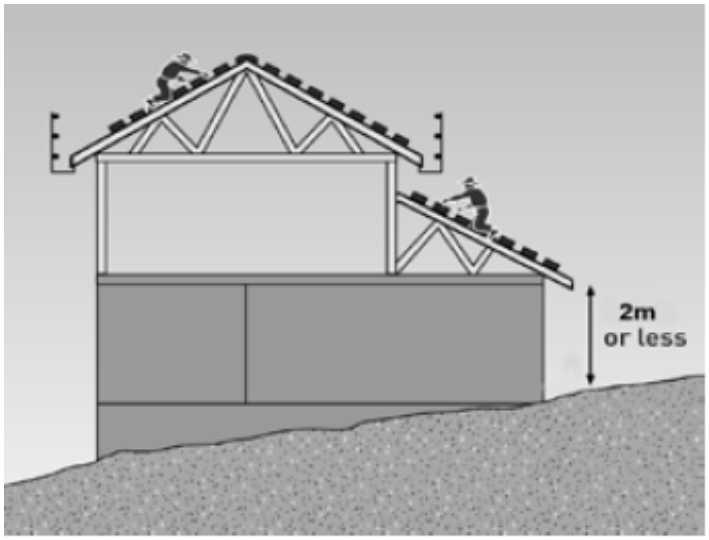


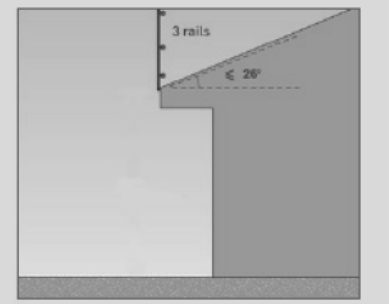
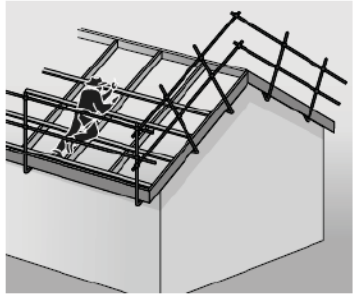
- **Walking the external top plate is now strictly prohibited under all conditions**.

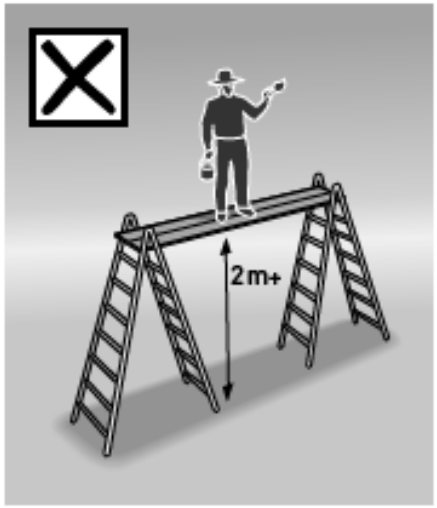
		 **FIGURE 16** 'No go' zone for persons erecting trusses
Use of fixed existing structure as edge protection	Fall from height	Fall from height from one level to another where a fixed structure (e.g. parapet) in place will only be considered if that structure if of a sufficient strength and height to prevent a fall. In most cases such structure would need to be in excess of 900mm in height and have a midrail or fully enclosed structure. Where this is not the case please contact your site supervisor. 
Works using lower section roof as work platform on doubles (e.g. alfresco & rumpus roofs)	Falls from height, Slips, trips & falls	Works using the completed roof surface on rear sections of doubles (less than 35 degrees pitch) is to have roof guardrail and physical fall protection installed for this type of works. The railing is to be installed by an accredited installation company to conform to Industry Standard. The fall protection measure should be installed on the roof where: - the fall from the height of the edge of the roof is greater than 2 metres; - The roof is clad in concrete, semi-glazed tiles and the slope is more than 26 degrees; or is clad in metal deck or glazed terracotta tiles and the slope is more than 23 degrees; and

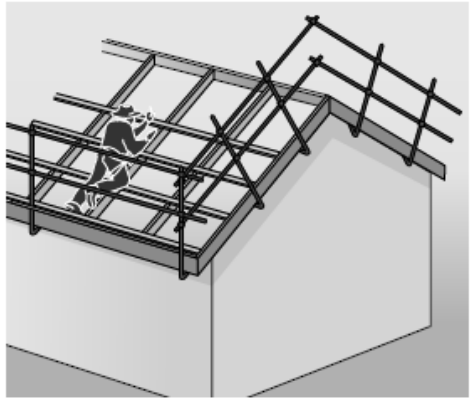
- Any other situation where the risk factor is increased eg. adverse weather conditions such as rain, hail, wind, ice which may affect the roof.

Workers are to inspect the guard railing prior to works commencing.



Work on roof where roof guard rail can be installed	Fall from height	**Perimeter Fall Protection & Roof Work** Physical fall protection railing is often installed to control the fall hazard where roof and floor construction work is performed. The railing is to be installed by an accredited installation company to conform to Industry Standard. The fall protection measure should be installed on the roof where: - the fall from the height of the edge of the roof is greater than 2 metres; - The roof is clad in concrete, semi-glazed tiles and the slope is more than 26 degrees; or is clad in metal deck or glazed terracotta tiles and the slope is more than 23 degrees; and - Any other situation where the risk factor is increased eg. adverse weather conditions such as rain, hail, wind, ice which may affect the roof. - Ground up guard rail maybe required where box guttering is installed and post & coupling guard rail can not be installed -   (a) Fall height greater than 2m - roof pitch at or below 26°  **Figure 20** Fixing roof battens to trusses
Use of bracket, hanging, or two plank scaffold systems	Fall from heights	**Bracket Scaffold** For fall-heights >2 m, the installation of bracket scaffolding maybe used to gain access where heavy duty scaffolds can not. As with heavy duty scaffold it must be installed & handed over by the licensed scaffolder as complete. The scaffolder must supply a certificate of completion (ScaffTag) that verifies this. No work is to be carried out (other than that of installing and dismantling of the scaffold) from the bracket scaffold unless the scaffold, or the relevant part or portion of the scaffold, is complete To prevent collapse, do not load platforms & place materials on platform which can be dislodged as there is no toe-board installed

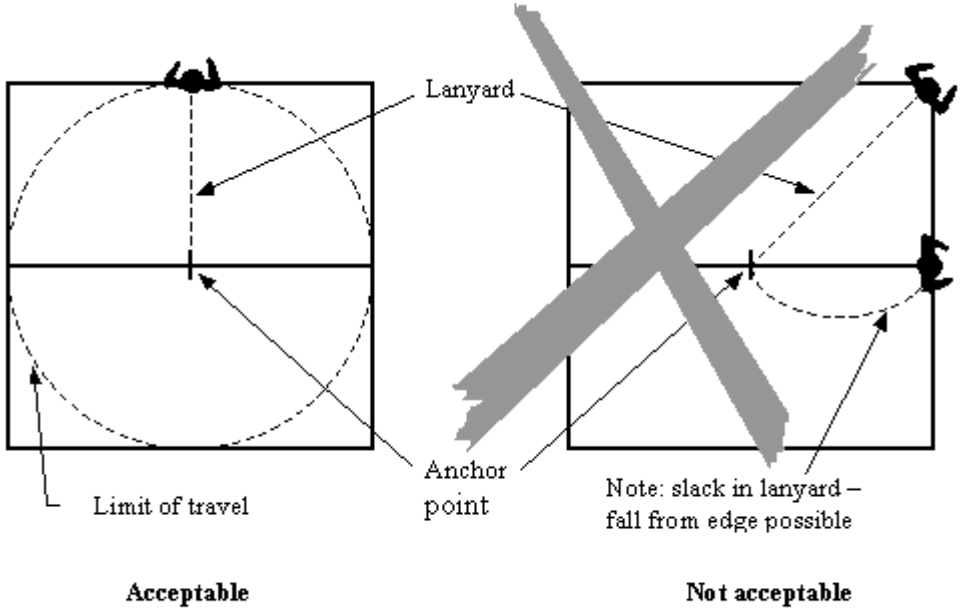
		Clear access must be maintained across the length of the bracket scaffold. The climbing on the handrails to gain extra height is not allowed. Un-authorised alterations to the guardrail, planks, brackets, or, any type of fixing device. Access to the scaffold is to be via the identified access point and hop up. Bracket scaffold in excess of 2m in height should be fitted with mid & top railing. In some cases where there exists the potential of an internal fall from the two plank system an extra plank or guard rail is to be fitted. Where guard rails are missing from the scaffold these are to be reported to the Site Supervisor and works not to commence until rectified. 
Use of trestles < 2m in height	Fall from height	**Working Platforms on Trestles (with a fall height of less than two metres).** For work on single-storey dwellings, platforms (eg scaffold planks) on trestles provide a bigger, more stable surface to work from than a ladder. Ensure trestles are of a suitable standard, sufficiently strong to carry the expected loads of works, materials, and tools. Trestles and planks must be strong enough to carry the weight of bricks, mud boards and those persons working from them as outlined in AS 1576. Ensure that planks and platforms are in good, sound condition and that trestles are placed on a firm, even surface. All planks are to be checked for signs of wear or deterioration & no planks are to be used on site which are unsafe  **(c)** Worker could fall more than 2 metres

Fixing of Roof Battens to trusses		**Fixing Roof Battens to Trusses** • Roof tile battens (which may be of timber or pressed galvanised metal) should be spaced at not more than 900mm centres to reduce the risk of internal falls. While fixing battens, the worker should position his or her body over a roof truss at all times and avoid over-reaching. The bottom (first) batten shall be installed as close as possible to the top edge of the fascia so as to act as a 'strengthener' to prevent the fascia from being dislodged should any person accidentally stand on it.  **Figure 20** Fixing roof battens to trusses
Installation of fascia & Guttering >2m		**Installation of Fascia & Guttering** • All fascia and gutter installation work on two–storey dwellings shall be carried out off the 'Quickstage' scaffolding or two plank bracket scaffold. Work shall not commence until the scaffolding has been fully erected, and a Certificate of Compliance has been handed over. • Where fascia & gutter installation exceeds 2m (>2m) the use of platfroms with a guard rail to prevent a fall is required • Contractors/subcontractors who use the scaffold as part of their work will be responsible for reporting any faults in the erection and/or maintenance of the scaffold to their Supervisor. If any risk to health and safety of workers or the public is identified work shall cease until the risk is controlled. •
Works on balcony – truss installation and works on balcony	Fall from height	**Doubles With Balcony Cover - Installation of Trusses & Plasterboard** The construction of houses with balcony cover poses a fall risk when installing the balcony roof trusses and plasterboard in this area. The following control measures are in place to minimise this hazard: • Temporary scaffold to be installed to assist the framer with the installation of balcony roof trusses. To assist with placement have the carpenter mark outside edge of columns on the footing. Alternatively the flooring for the balcony area can be installed at the time of the laying of flooring and first floor edge protection installed. • Off hire as soon as roof trusses completed & any other work in this area and once a guard has been installed in the window opening • Install 1.5 mtr Balcony fall guard when all brick work is completed and prior to any works on a balcony area occurring. Must specify attachment method. (book 48 hrs in advance)

		• All work associated with the balcony roof should be completed prior to removal of the balcony fall guard e.g. cutting in, plasterboard, painting etc. 
Works near cut-ins and sky lights	Fall through opening	**Cut In's and Sky Lights** Where these are a part of the work plans the following measures are required: • Area to be barricaded off with safety mesh or physical guard rail until installation is completed • Use of securely fixed boards may also be used. 
Falling objects	Struck by falling object	• Kick boards are to be maintained whilst using scaffold • Debris should not be thrown to the ground whilst others are in the vicinity of the works • Other works should not work on site whilst roof tilers are present. Contact Site Supervisor prior to commencing works and tool box chat or SWMS prepared between all workers.

		• Roof debris should not be through from the roof whilst others are in the vicinity. • Workers should not work on site whilst roof tilers are present working on the roof. Contact is to be made with the Site Supervisor. The following are guidelines for the safe disposal of debris from a roof with particular regard to roof tiles: • Broken, damaged tiles or other debris are to be ***carefully*** thrown into two piles; one at the front and one at the back of the property. Both piles shall be located more than 2 metres from the gutter line to retain a 2 meter clear 'fall zone'. Tiles shall not be dropped or left on the ground within the fall zone, except where they fall under an existing scaffold. Other workers on site should be aware of this drop zone. At the end of each work day all pieces of tile and debris shall be cleared up and put into the two piles as above. Roof tilers shall be aware of the hazard broken tiles present to other workers on the site. Workers, Supervisors, and others attending site should consult with workers who maybe working at site making them aware of their presence if there is a risk of falling objects. Consult with the contractor as to measures that can be put into place to prevent injury e.g. cease throwing of materials until workers, supervisor, or others have left site, wearing of hard hats as a personal protective mesure.
Works occurring in a roof space after plasterboard installation		**Prior to Accessing the Roof Space** – Before starting any work, turn off all electricity to the property at the main switchboard if the house is live and take steps to prevent the electricity from being turned back on while work is in progress (tag/lock-out). **Accessing Roof Space** • Be aware that heat and humidity may cause heat stress, so make sure fluid intake is sufficient to ensure you do not become dehydrated. Avoid accessing roof space in hot weather conditions (early morning starts better on high temperature days) • Take additional lighting (e.g. torch) with you as the lighting is generally poor in ceiling spaces • Take care accessing and traversing the work area, avoiding tripping over debris, material and the ceiling trusses • Step carefully on ceiling joists or other beams – not the ceiling material (i.e. Gyprock sheeting) – to avoid risk of falling or injury maintain three points of contact (foot on each truss and hand on girder) • Be aware of the location of electrical cables, fittings and equipment and avoiding contact with them. Solar hot water piping can be very hot if not covered by the insulation. • Wear trousers and long sleaved loose fitting clothing to avoid contact with insulation materials

		• If the roof space is dusty wear a P2 dust mask
Set up of fall arrest system	Personal Injury: - Falls - Musculo-skeletal injury - Suspension trauma	Set-up of fall arrest system: - Maximum distance free fall before arrest must not exceed 2m - Ensure sufficient distance between work surface and any surface below to enable shock absorber to fully deploy - Do not use shock absorber on single story - Do not use lanyard in combination with inertia reel – leads to increased free fall distance Note: To calculate suitable distance, take into account: - Distance between work surface and any surface below - Original length of lanyard - Maximum energy absorber extension - Height of person - Clearance allowance for dynamic stretch. Ensure anchor point is as high as possible above work area. Never work above anchor point. Inertia reels: - Can only be used where there are no obstructions (unless manufacturer can demonstrate contact will not impair function) - Do not use on steep pitched roof (does not lock during fall down pitched roof) - Do not lock in place – not designed for continual support Operator. Ensure: - Physically fit and able to withstand possible fall - Within weight limit (including clothing and equipment) of harness. •
Set up of travel retrain system	Personal Injury: - Falls	Travel Restraint Systems - Use to physically prevent someone from reaching the unprotected edge - set out the lanyard to a predetermined length to gain access to the work area however prevent fall from the unprotected edge ie. Lanyard is shorter than the distance to the unprotected edge or the attachment point to the user is at the shorter length.

	- Musculo-skeletal injury - Suspension trauma	- If user is attaching themselves to the lanyard at point shorter than the unprotected edge the user is not to make any further adjustment unless an assessment is made as to the pendulum effect and this not to occur if the limit of travel point has been reached see Figure 3. - set up the system so that user will be prevented from reaching the unprotected edge - One example of inappropriate set up is shown in the right hand diagram in Figure 3.  **Figure 3** – Roof work using travel restraint