

Guidance for Service Providers

Evacuation Plans for ECE Services in High Rise Buildings

Purpose

1. This document provides guidance to assist service providers to meet (or exceed) the requirements of HS104 – HS106 when developing and implementing evacuation plans for ECE centres located in high rise buildings.
2. Services may choose to use other approaches better suited to their needs as long as they comply with the criteria.
3. This document provides guidance only. Service providers are encouraged to work closely with their local Ministry of Education and the NZ Fire Service when considering locating an ECE service above ground level in a high rise building.
4. Each service in a high rise building presents a unique set of circumstances which must be considered when developing a safe and effective evacuation plan. The Ministry will assess the compliance of each plan on a case-by-case basis, taking into account the circumstances that apply to the proposed service. Following the guidance in this document does not necessarily guarantee that the evacuation plans and procedures of the service will be assessed as complying with HS104 – HS106.

Legislative and Regulatory Background

5. The *Education (Early Childhood Services) Regulations 2008* Health and Safety practices standard: general (46 (1)(d)) requires services to “take all reasonable steps to ensure that appropriate procedures are in place to deal with fires, earthquakes, and other emergencies”.
6. The licensing criteria used by the Ministry to assess these Health and Safety practices and standards, in relation to emergencies are HS104 – HS106.
7. **HS104** requires the premises to have a current Fire Evacuation Scheme approved by the New Zealand Fire Service (NZFS). Service providers should be aware of the following:
 - i. The approved scheme applies to the whole building and all tenants, and is the responsibility of the building owner. It is not specific to the ECE service.
 - ii. The NZFS can decline an evacuation scheme application and make recommendations for amending the scheme. However recommendations cannot require the applicant to exceed the requirements of the Building Act.
 - iii. The *Fire Safety and Evacuation of Buildings Regulations 2006* regulations are silent on evacuating children from high-rise buildings. Currently the NZFS’s evacuation scheme application process and requirements do not have requirements specific to an ECE environment.
8. **HS105** requires that the service has designated assembly areas for evacuation purposes that do not unnecessarily place the children at further risk.

9. In addition to compliance with **HS104**, the service provider must demonstrate compliance with **HS105** which requires a documented evacuation procedure for the premises.
 - i. This evacuation procedure is specific to the ECE premises and relevant to its location to ensure it covers all emergency situations such as fire, earthquake, tsunami, flood etc.
 - ii. While this procedure has a broader scope than just fire evacuation, it must be consistent with the over-arching NZFS-approved fire evacuation scheme.
 - iii. This evacuation procedure is the responsibility of the service provider.
 - iv. Assessment of this evacuation procedure for compliance with HS105 is the responsibility of the Ministry of Education.
10. **HS106** requires that the adults providing education and care are familiar with relevant emergency drills and regularly carry these out with the children. Records of emergency drills must be kept.

Overview of key issues

11. Safely evacuating children from services above ground level requires careful consideration of a number of factors:
 - i. Premises
 - ii. Processes
 - iii. People
 - iv. Practice
12. Particular concerns include:
 - i. Physical capability of children to manage multiple flights of stairs
 - ii. Requirement to carry babies and children who are not confident stair walkers
 - iii. Appropriate adult:child supervision ratios for evacuation
 - iv. Behaviour of young children during emergencies
 - v. Evacuation plans can be complex. This leads to the possibility of multiple potential points of failure. That is, there may be several points in the plan at which things can go wrong.
 - vi. Effectiveness of staff training and preparedness for emergencies.
 - vii. Appropriate contingency planning to address issues such as presence of untrained relieving staff, unexpected behaviour of children who are unwilling to walk down stairs etc.
 - viii. Risks associated with the behaviour of other tenants in the building, either through creating hazards in stairwells, or through shared use of the stairwells during an evacuation.
 - ix. Suitability of the external place of safety (**HS105**), which may be located in a busy city street or carpark.
 - x. Confidence and knowledge of the service's staff to effectively follow a complex evacuation procedure in an emergency (**HS106**).
13. The fact that a service provider, who wants to operate an ECE service on a floor other than the ground floor in a high-rise, multi-use building, has had an evacuation scheme approved by the NZFS is not, in itself, enough to satisfy the Ministry that the service also meets the requirements of HS105.
14. The process for managing the evacuation of children from a high-rise building can itself create a risk to children and consequently staff. There are additional health and safety considerations related to the physical and psychological wellbeing of children that Ministry staff must be assured will be fully met under any circumstance including during an emergency evacuation.

Evacuation Planning Guidance

Overview

15. These guidance notes are designed to ensure that evacuation procedures for services in high rise buildings are developed from a sound risk assessment and include controls, mitigants and contingencies that will reduce identified risks to an acceptable level.
16. The Ministry's preference is that early childhood education (ECE) centres within multi-storey buildings are located on the ground level, or as close as possible to a direct exit to the outside of the building.
17. When this is not possible, we expect an evacuation procedure for the service to consider provisions which will directly mitigate the risk to children during an evacuation. This includes consideration of:
 - Appropriate adult:child ratios for children who need carrying, require some assistance or can walk independently down stairs
 - Risks related to the behaviour of other building occupants
 - Risks related to the presence of relieving teachers who may not be familiar with the centre's emergency procedures
 - The unexpected behaviour of children and adults during an emergency situation
 - Risks of multiple potential failure points that can exist in a complex plan. Ideally the plan should be simple and easy to communicate to staff and other adults. This would reduce the cumulative risk that may arise in a complex plan.
18. Evacuation processes for a service above ground floor in a high rise building, must be:

EFFECTIVE	Children and staff evacuate the building to an external place of safety in a reasonable period of time. (Time to be determined in discussion with NZFS)
SAFE	Children and staff are not exposed to unnecessary hazards or the likelihood of harm during the evacuation.
REPEATABLE	The process is consistent and repeatable during trial evacuations which may involve a variety of different emergency scenarios.
ROBUST	The process does not place undue reliance on individual staff, specific equipment or certain conditions. This means that if any of those features were compromised then the overall process will remain effective.

Preparing your plan – risk assessment

19. The licensing criterion HS108 requires services to eliminate, isolate or minimise hazards to the safety of children.
20. The best practice for any service located in a high rise building, or a shared facility, is to develop a risk assessment matrix as the first step in developing an evacuation plan for the service.
21. This will support the development of a plan that includes appropriate controls and contingencies to address the identified risks.
22. Risks could be considered under a number of headings, such as:
 - i. Risks to children – under two, over two
 - ii. Risks to staff
 - iii. Risks to visitors, parents etc
 - iv. Risks to other building users
23. There are likely to be a number of risk drivers, or sources of risk to be considered, which will include, but are not limited to:
 - i. Activity-based – eg cooking which is a common cause of fire in ECE services
 - ii. Premises – stairwells, rubbish
 - iii. Children – behaviour, needs
 - iv. Staff – behaviour, needs
 - v. People – other tenants
24. There are a number of formats that might be used for a risk assessment, a formal approach is included in Appendix 1. A more simple approach might be to identify risks as below:

Risk Category	Risk Description	Consequence	Likelihood	Controls or Contingencies to be included in evacuation plan
Eg Risks to staff				

25. The risk assessment should be reviewed by the centre management at least monthly, particularly to identify the needs of the currently enrolled children, so the procedures can be adjusted as required. Documentation of this risk assessment review should be kept as evidence of the service provider's implementation of their duty of care.
26. Daily hazard management checks should include all parts of the indoor assembly areas, stairwells and external places of safety. Documentation should be kept that this has taken place. This should include any hazards identified, actions required, and a confirmation that the required action has remedied the issue. (Eg boxes and other rubbish removed from stairwell)

Expert Advice

27. Advice on the development or assessment of an evacuation plan from an ECE service in a high rise building can be sought from the New Zealand Fire Service (NZFS) and also from independent external health and safety/risk assessment consultants.

Elements of an effective plan

28. An effective evacuation plan must address the four areas of:

- i. Premises
- ii. Processes
- iii. People
- iv. Practice

i) Premises

29. The process of gaining Resource Consent and an approved Fire Evacuation Scheme for the building provides some certainty that the building has appropriate fire protection systems for the safety of the occupants. It is also important to consider the following aspects which should be reflected in the evacuation procedures:

Building Configuration	<ul style="list-style-type: none">• The location of the ECE centre within the building may impact on the evacuation plan. Consideration should be given to:<ul style="list-style-type: none">i. The location and nature of tenants occupying floors above and below the centre.ii. Location of stairwells.iii. Design of stairwells in relation to ease of use for young children, eg height of stair risers, depth of stair tread, child-height handrail or other support, number of steps in each flight, width of stairwells.iv. Use of outdoor areas, which may or may not be sprinklered, as possible assembly points prior to evacuation.• Where possible the ECE centre should be located on the level closest to the ground level, or on any level that has a direct exit to a place of safety outside the building.• For services located over multiple floors, the youngest children should be located on the level closest to the ground.• Location of a centre over multiple floors within a building may also represent a higher risk and result in an evacuation plan with multiple potential points of failure.• Service providers should become familiar with the fire protection systems that have been built into the premises as these need to be taken into consideration in assessing any proposed evacuation process.• Fire cells (internal places of safety) within high-rise buildings can serve as a temporary evacuation assembly point; these are used in conjunction with a fully compliant sprinkler system. Fire cells are designed to prevent fire from penetrating the cell for differing periods of time eg, 30 or 60+ minutes depending on building code requirements. It is anticipated that the use of a sprinkler system will mean that a fire does not spread and therefore the fire cell can be a safe place for children and staff to “shelter in place” until instructed to evacuate to the outside.• Note that outdoor play areas cannot be considered for use as internal places of safety.
-------------------------------	---

External assembly points	<ul style="list-style-type: none"> HS105 of the licensing criteria for centre based services requires that the designated assembly areas for evacuation purposes do not unnecessarily place children at further risk. Assembly points outside of high-rise buildings are often car parks or an area across the street from the building. Choosing a car park as an assembly area where cars could be travelling with drivers probably unaware there is an evacuation underway (therefore not on the look out for large groups of active and potentially distressed children) may not be considered a safe solution. Selecting an appropriate assembly area should also take into account where NZFS vehicles and personnel might be when they are responding to a fire. The use of portable orange netting, cones and walking ropes can be useful for keeping children together while moving and once they have reached the final place of safety. Ideally any equipment needed should be stored at ground level rather than being carried down from an upper floor.
---------------------------------	---

(ii) Processes

30. The processes in the centre's evacuation procedure must be consistent with the overall approved fire evacuation scheme for the building.
31. The specific processes required will also depend on the configuration of the building and other features such as:
 - i. Whether the approved evacuation scheme provides for a staged evacuation process (ie to an internal place of safety) or an evacuation directly to an external place of safety.
 - ii. The movement of other tenants in the building.
 - iii. The fire protection features of the building, eg sprinklers, emergency warning information system (EWIS) etc
32. The processes must show proper consideration of the physical and behavioural capabilities of the children attending the service.
33. Children's physical developmental capabilities develop along very diverse timelines in the early years. Their physical abilities can also vary from day to day – dependent on more obvious factors such as illness or tiredness, and also on less obvious factors such as growth phases, stress, and the development or emergence of other physical, behavioural, cognitive or emotional skills. Sometimes children can "go backwards" for a period of time in terms of physical capabilities.
34. The Plunket website gives a guidance of between 3 – 4 years for managing stairs, "At around 3 years of age you can expect your child to run and jump, walk up and down stairs holding onto a hand or rail....." <http://www.plunket.org.nz/your-child/2-5-years/development/>
35. Other sources of guidance suggest that children will reach this developmental milestone between the ages of 4 – 5 years. <http://www.kiwifamilies.co.nz/articles/child-development/> and <http://www.pbs.org/wholechild/abc/physical.html>
36. Determining and assessing children's ability to safely and independently walk down several flights of stairs in a large group of children and adults is complex. Any assessment is likely to be unreliable in an emergency situation. To mitigate this risk a service provider needs to consider carefully the adult:child ratios that will be required to ensure a safe and effective evacuation plan.

37. The evacuation process needs to be developed within the context of the building configuration and fire protection facilities.

38. Determination of safe evacuation ratios, processes and the use of assistive equipment should be made within that context.

39. The following aspects of the process should be included or covered in some way:

Identification of children's needs	<ul style="list-style-type: none"> • Children will have varying needs for assistance during an evacuation depending on their mobility and confidence in negotiating multiple stairs. • Children are likely to fall into one of four categories: <ol style="list-style-type: none"> 1. Require supported carrying (eg baby in a sling) 2. Require carrying in arms/on hips 3. Assisted walkers – require adult hand or support 4. Non-assisted walkers – can walk downstairs without adult support. • The process should identify how a child's needs are identified and recorded in such a way that the process will provide them with the appropriate assistance during an evacuation. • It is recommended that the process allows for: <ol style="list-style-type: none"> 1. Identification of a child's needs on enrolment 2. Regular re-assessment of children's needs on an, at least, monthly basis 3. A process to assess the changing needs of a child who may have some physical or behavioural challenges. • Good practice is to record each child's evacuation needs on the daily sign in sheet – eg carried in sling, assisted walker, independent walker. The teacher responsible for each ECE level within the building should ensure that she/he is familiar with these requirements so that staffing can be adjusted as necessary to cater for evacuation in response to the children present each day. • A service should not restrict the enrolment, or ongoing attendance of children, based on any requirement for physical competency. This is likely to be a breach of the Human Rights Act 1993.
Preparation	<ul style="list-style-type: none"> • The process should cover the steps required to prepare children, staff and other adults for evacuation. This will need to take into consideration whether the evacuation is initially to an internal place of safety, or directly to an external place of safety. • Points to be considered are: <ol style="list-style-type: none"> 1. Where will the children be gathered in order to prepare them for evacuation? 2. Which staff members will be responsible for this preparation? 3. How will children be allocated to staff members for carrying or other assistance during evacuation? 4. If carrying equipment is being used, how will children be placed into these items? 5. Where will carrying supports (eg baby slings) and other evacuation equipment be stored?

	<ol style="list-style-type: none"> 6. Has a floor warden been allocated and duties clearly identified? 7. Is there a process for taking a roll, counting children etc prior to leaving the floor to ensure that all are accounted for? 8. Does the process need to provide for items to keep children warm and dry during an evacuation? Eg blankets, warm clothing. If so, where will these be kept? 9. Does the process identify the emergency supplies, family contact lists and other items that need to be taken during an evacuation? Is it clear who will take these? Where will they be stored? 10. If the evacuation can be via more than one stairwell, does the process allow for emergency supplies to be accessible irrespective of which exit is used?
Communication and co-ordination of evacuation	<ul style="list-style-type: none"> • If the centre is split over more than one floor it is advisable to have a process for communication and co-ordination during the evacuation. • Walkie talkies can be useful for advising the progress of each group of children down the stairwells, and in particular for communicating any hazards or issues that have arisen. • This applies to communication within the staff of the ECE service but also to communication with the building warden who is co-ordinating the overall evacuation.
Evacuating the children	<p><i>Children requiring assistance</i></p> <ul style="list-style-type: none"> • Adults carrying children should not carry a load of more than 24kg. • Ideally this load should be evenly distributed and supported on the body – eg one child on the front and another on the back. • The carrying arrangements should, whenever possible, allow each adult to have one hand free for their own stability. • Adults carrying children should focus only on the children they are carrying during an evacuation. Ie they should not have responsibility for other children or people during an evacuation. • Equipment used for carrying children must be fit for purpose. It should be appropriate for the children being carried and not expose them to more risk of harm, eg hitting their head while being carried. • As an alternative to staff being allocated particular children and carrying or assisting them down the full length of the stairwells, we have witnessed a service successfully evacuate younger children using a <i>“bucket chain”</i> approach. This involves: <ol style="list-style-type: none"> 1. Marshalling the babies and toddlers onto the first stair landing. 2. A teacher takes the first child and, holding the handrail, proceeds down to the next landing where they become the next landing control point. This leaves the most senior person for babies and toddlers on the top landing in control. 3. The next staff member takes a child, and hands it to the lower floor control, who places the child on the ground beside the other one, preventing access to next stair set. 4. Staff progressively place themselves in the stairwell until they form a “bucket chain” of no more than 3-4 stairs each, and pass children one at a time until all children are assembled on the next landing.

	<p>5. This is repeated for each floor.</p> <ul style="list-style-type: none"> • The bucket chain approach: <ol style="list-style-type: none"> 1. Does not rely on the use of any form of equipment. 2. Does not rely on a fixed ratio of adults:children for the evacuation. Depending on the length of each set of stairs, a group of 4-5 adults can safely evacuate any number of babies and toddlers using this approach. • The success of this approach, or any approach, is dependent on the particular circumstances of the centre. There is no “one size fits all” approach to evacuating children requiring assistance. <p><i>Children walking independently</i></p> <ul style="list-style-type: none"> • Adults not carrying children should be responsible for no more than 8 independent walking children. <p><i>General</i></p> <ul style="list-style-type: none"> • We note that some services achieve these ratios or better through the use of other adults in the building on higher floors who are police-vetted and trained in the centre’s evacuation procedures. • Adults who are used to assist in evacuation should not be required to ascend stairwells to a higher level. • If the procedure relies on adults not employed by the centre these adults must be police-vetted and sufficient numbers must be available at all times the centre is in operation. • Adults carrying evacuation equipment, first aid supplies, temporary fencing, or any other materials should not be responsible for supervising any children. • There should be “floating” adults who are able to provide additional assistance in supervising confident stair-walkers or in carrying a non confident stair walker as circumstances require. • Depending on the circumstances, the floating adults might be in a ratio of between 1:15 or 1:20. This need might arise in the following circumstance: <ol style="list-style-type: none"> i. Child refusing to be placed in carrying apron or struggling while being carried. ii. Confident stair walker refusing to walk due to panic. • The procedure needs to consider how the group/s of children will proceed down the stairwell. This includes consideration of: <ol style="list-style-type: none"> 1. Using an adult at the head of each group to set a slow, steady pace. 2. Placing adults throughout each group to reinforce the pace and to provide assistance to independent walkers. 3. Independently walking children may be grouped 2 or 3 abreast rather than in single file. The effect of this “bunching” can keep the children moving at the pace of the group and provide some peer support and stability.
--	--

	<p>4. Allowing for the evacuation of tenants from higher levels of the building. It may be most effective to wait for these tenants to descend past the ECE levels before staff and children enter the stairwells.</p> <p>5. Groups of independent walking children should go ahead of groups of adults carrying or assisting other children.</p> <p>6. If the landings are of a suitable size, it can be helpful to halt each group on the landing to “regroup” and provide assurance and assistance to children as needed.</p> <ul style="list-style-type: none"> • A number of factors may be taken into consideration to mitigate our requirement that adults carrying children do not have responsibility for supervising any other children. These factors might include: <ol style="list-style-type: none"> 1. There is a suitable child-height handrail on all flights of stairs. 2. The order in which adults and children are moving down the stairwell. For example, adults carrying children are spread throughout the moving line. 3. The management of the movement down the stairs to limit the flow on impact of any difficulty occurring in the line. For example, limiting the number of adults and children on each flight of stairs at any time. This may involve groups waiting on a landing until the next flight of stairs has been cleared by the preceding group. 4. There are more “floating” adults available than our suggested ratios identified above. 5. The design of the stairwell, particularly the dimensions of the stair rise and tread and the ease with which children are able to walk down the stairs. • If appropriate mitigations are in place it may be appropriate for adults carrying two children to also be responsible for supervising two independently walking children, and for adults not carrying any children to be responsible for supervising up to ten independently walking children. • The procedure must include detailed steps for evacuation via all nominated exits. • The plan should consider how the staff will deal with an unexpected event during the evacuation, eg an upset child, a slip or trip by an adult, lights going out in the stairwell etc. • The plan should consider how the evacuating group of adults and children will respond if NZFS personnel are moving up the stairwell during the group’s descent.
Hazard management	<ul style="list-style-type: none"> • The centre’s hazard management procedures should include a daily hazard check of the stairwells – particularly to check for items sorted in the stairwells, fire doors propped open, and hazardous items left in the area immediately outside any final exit door. • This daily check should be documented and should record how/when hazards have been addressed.

Equipment Checks	<ul style="list-style-type: none"> • The procedure should include regular checks of equipment used in the evacuation – eg condition of any baby slings, batteries for torches etc. • These checks should be documented.
-------------------------	---

(iii) People

38. Overseas research confirms that the familiarity of staff with evacuation procedures is one of the most critical factors in avoiding injuries or fatalities during an emergency.

The evacuation procedure should address the following areas:

Centre Staff	<ul style="list-style-type: none"> • The plan should show compliance with the Health and Safety in Employment Act 1992 which requires that employers keep employees safe from harm. The procedure should not place any staff member in a situation during evacuation which creates a higher risk of harm than would be due to the emergency itself, ie by requiring staff to ascend to higher floors to assist during an evacuation, or requiring staff to carry children in such a way which puts both adults and children at risk. • Service providers will need to be aware of the requirements of the Human Rights Act 1993 and the Employment Relations Act 2000 if they are considering any restrictive employment practices such as pre-employment physical tests, or ongoing physical requirements for staff. These two pieces of legislation prevent discrimination on a number of grounds including physical ability. Service providers may need to take legal advice on the acceptability of their employment practices. • The plan must include provision for induction training for new staff and refresher training on a regular basis for all staff. This should be documented to provide evidence that it is taking place. • Evacuations can be practised during staff meetings. For example, a service using the “bucket chain” method regularly practises using filled back-packs as substitute children. • Given the nature of the risk to the safety of children and adults during evacuation from a high rise building, the centre should consider how to develop and maintain a culture of health & safety awareness and risk management among centre staff. Including emergency preparation as a regular item on staff meeting agendas is recommended. • Consideration should be given to how relievers will be made aware of their role during an emergency evacuation. Best practice is for this training or information provision to be documented. • As an example of good practice, one centre walks each new reliever down the full exit stairwell and out to the final place of safety before they begin work so they are familiar with the environment. • Consideration should be given to the physical demands that will be placed on staff who are carrying children, and what contingencies are in place if any staff member is unable to fulfil this duty in an emergency. • As an example of good practice, a service has developed a process that does not require any pregnant or physically challenged staff members to carry children. They are used more simply to marshal and manage children on the landings. • The procedure should consider how back up will be provided for any key member of the evacuation team, eg a floor warden.
---------------------	---

Parents and other visitors	<ul style="list-style-type: none"> Information about the centre's evacuation plans should be clearly visible for all parents, caregivers and visitors. The plan should identify which staff member/s will be responsible for ensuring the safe evacuation of any visiting family, professionals or other visitors during an emergency. The plan should consider how to accommodate the needs of any visiting parent who wants to take responsibility for their own child/children during the evacuation or immediately on exiting the building. Consideration should be given to how families will be kept up to date with evacuation and emergency procedures. This might be via a regular item in a centre newsletter. It may be appropriate to include a section on the centre enrolment form which provides basic information about the evacuation provisions and obtains a parent/caregiver signature as confirmation that these arrangements are accepted. Consideration should be given to how the centre will manage special events which may involve additional adults and children being present, eg family social evenings.
-----------------------------------	--

Practice

39. Overseas research confirms that two factors are critical in preventing casualties or fatalities during an emergency evacuation:

- The level of familiarity of staff with the procedures, and
- Regular practice of evacuation procedures.

Evacuation Drills	<ul style="list-style-type: none"> ECE services above ground level in high rise buildings should complete a trial evacuation more regularly than other services. Drills should be carried out at least monthly. Drill records should be kept for each trial evacuation and used to inform any changes to procedures. The records should include: <ol style="list-style-type: none"> Date/time of drill Numbers of children/adults present for both over 2, and under 2 children. Time taken for evacuation, for all groups of children. Checks that key steps of the procedure were followed correctly, with comments where necessary. Notes of any issues that occurred during the trial and what action, if any, is required to address this. Vary the scenarios tested in trial evacuations so that all available exit routes are tested. Include evacuations based around different assumptions about where the fire has started. As part of the service's self review processes, the drill records should be reviewed, any necessary changes made and staff appropriately informed.
Other considerations	<ul style="list-style-type: none"> Encourage parents and children to use the stairwells as frequently as possible, if this is practical, so that children develop and maintain familiarity with the stairwells.

Appendix 1 Method of Identifying, Assessing and Prioritising Risks

Step 1 Determine Consequence – what is the expected effect?

Level	Descriptor	Example of each level
1	Insignificant	No injuries, low financial loss
2	Minor	First aid treatment, issues addressed on site, medium financial loss
3	Moderate	Medical treatment, external support required, high financial loss
4	Major	Extensive injuries, operations impacted, major financial loss
5	Catastrophic	Death, operations halted, huge financial loss

Step 2 Determine Likelihood – what is the possibility that the effect will occur?

Level	Descriptor	Example of each level
1	Almost certain	Expected in most circumstances
2	Likely	Will probably occur in most circumstances
3	Possible	Might occur some of the time
4	Unlikely	Could occur at some time
5	Rare	May occur only in exceptional circumstances

Step 3 Determine the level of risk = consequence x likelihood

Likelihood	Consequences				
	Insignificant 1	Minor 2	Moderate 3	Major 4	Catastrophic 5
Almost Certain 5	5 High	10 High	15 Extreme	20 Extreme	25 Extreme
Likely 4	4 Medium	8 High	12 High	16 Extreme	20 Extreme
Possible 3	3 Low	6 Medium	9 High	12 Extreme	15 Extreme
Unlikely 2	2 Low	4 Low	6 Medium	8 High	10 High
Rare 1	1 Low	2 Low	3 Medium	4 High	5 High

Step 4 Record risks score on matrix

Score	Action
Extreme	Act now – urgent – requires immediate attention
High	Senior management decision is required urgently
Moderate	Management responsibility must be specified
Low	Manage through routine procedures