District Council of Franklin Harbour

Business Continuity Plan

Office and Depot

2014

DOCUMENT APPROVAL

This document has been endorsed and approved for use by:

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Chief Executive Officer
District Council of Franklin Harbour
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INTRODUCTION

Nearly every day there are many unpublicised disasters, man-made and natural, which devastate both private and public sector business units. Where the disruption affects critical business procedures, the consequences can be severe and include substantial financial loss, an inability to achieve levels of service laid down in Citizen's Charters, embarrassment and loss of credibility or goodwill for the organisation concerned. The consequential damage can have a much wider impact on staff welfare and the general public. The benefit therefore of having a recovery plan that can be implemented with the minimum delay, will significantly reduce the level of disruption to the District Council of Franklin Harbour and should ensure the rapid resumption of services to the public.
This plan outlines the actions required by the Council Management assisted by selected support staff. However, each work area should have a plan for their area. The area plans should cover all aspects of their own service delivery.

AIM

The aim of this plan is to ensure that the critical functions located at the Council Office and Depot are reinstated as soon as possible, ensuring an unbroken level of front line services, whilst full restoration is planned for and implemented.

OBJECTIVES

a. To mobilise the organisational structure required to manage the recovery.
b. To list the immediate action to be taken.
c. To list the short term measures necessary to replicate essential systems.
d. To list the medium term measures necessary to build up the replicated systems.
e. To describe long term recovery action.

PLAN ASSUMPTIONS

The plan assumes a worst-case scenario in which critical information systems and resources are destroyed by fire, other natural events, or by unauthorised entrants committing acts of destruction, theft or sabotage that prevent key service delivery functions being undertaken.

It is assumed that the District Council of Franklin Harbour policy as it applies to records management, file management, computer security in general and virus protection in particular, is being applied in all offices. Similarly, it also assumes that fire prevention, physical security and health and safety at work standards are also being applied.

It assumes that inventories of hardware/software, other business systems and major items of equipment are maintained by each area.

USE OF THE PLAN

This plan is designed to be used by all staff involved in the recovery process, and in particular the EMT and the Recovery Teams from the various departments. The plan outlines the recovery process in detail and is generic to the Councils Office and Depot.

RECOVERY STRATEGY – ACCOMMODATION – OFFICE

The District Council of Franklin Harbour Office will locate to the Cowell Institute for all business functions. An element of disruption over protracted periods may well have to be accepted by all parties.

The displacement of non-critical functions, or functions that can be re-sited with little impact, will be carried out to provide accommodation for critical business functions.

In the event of serious extensive damage to the District Council of Franklin Harbour Office, it may become necessary to relocate to other premises owned by the Council. An alternative pre-selected location that contains IT facilities, and sufficient communications and work station areas for priority staff has been identified. If necessary further property may be leased on a short term basis until such time as full replacement or refurbishment has taken place in the damaged premises. The provision of portable cabins may also be considered as a possible option.

Alternative Site – Council Office

The Franklin Harbour Institute on Main Street has been identified as alternative location for the initial response during any incident which prevents the use of the Council Office. It is intended that the strategic response personnel will go to the Franklin Harbour Institute along with the operational staff required to maintain essential services.

IT Vision and Caramel Computing Pty Ltd are the companies contracted to fulfil IT disaster recovery arrangements for the council. Full details of the arrangements in place are set out in the IT Disaster Recovery Manual.

RECOVERY STRATEGY – ACCOMMODATION – DEPOT

Wherever possible, the District Council of Franklin Harbour Office premises will be utilised to locate critical business functions. Areas that are not normally staffed could be used: e.g. the Community Sports complex or Cowell Electric. An element of disruption over protracted periods may well have to be accepted by all parties.

The displacement of non-critical functions, or functions that can be re-sited with little impact, will be carried out to provide accommodation for critical business functions.

In the event of serious extensive damage to the District Council of Franklin Harbour Depot property, it may become necessary to relocate to other premises owned by the Council. An alternative pre-selected location that contains IT facilities, and sufficient communications and work station areas for priority staff has been identified. If necessary further property may be leased on a short term basis until such time as full replacement or refurbishment has taken place in the damaged premises. The provision of portable cabins may also be considered as a possible option.

Alternative Site - Depot

The Community Sports complex on North Terrace, Rubbish Dump on Melrose Road and Council Chambers on Main Street have been identified as alternative locations for the initial response during any incident which prevents the use of the Council Depot property. It is intended that the strategic

response personnel will go to Council Chambers or Franklin Harbour Institute and the operational staff required to maintain essential services will be based at Show Grounds.

IT Vision and Caramel Computing Pty Ltd are the companies contracted to fulfil IT disaster recovery arrangements for the council. Full details of the arrangements in place are set out in the IT Disaster Recovery Manual.

ORGANISATION

In the event of a major incident resulting in the loss of all or some of the critical functions at Council Depot, the Emergency Management Team (EMT) will assemble, accompanied by departmental representatives as appropriate, affected by the incident. The EMT will remain in operation for the duration of the emergency situation. The EMT will have full authority to declare a disaster situation, and have the authority to decide which elements of the recovery plan should be invoked. The EMT will be responsible for the overall management, co-ordination, control, and monitoring of the disaster situation and for the disaster recovery actions outlined within the Business Continuity Plan.

The priority for the restoration of Council services is shown at Annex B. Depot staff have been allocated with 1 Council Response Team created to deal with the first response to an incident, right through to long term requirements. Council functions have been prioritised and essential staff placed in the relevant team. The teams have been colour coded and departments should allocate the relevant staff to teams, (by appointment) in their respective department plans.

STRUCTURE

Emergency Management Team

Chief Executive Officer (Team Leader) – Finance Manager is back up
Finance Manager
Works Manager (Brenton Heath is back up)
Administration Officer (Stacey Franklin is back up)
Any other persons deemed necessary by the Team Leader

EMT RESPONSIBILITIES

a. Evaluating the extent of the damage and the potential consequences.
b. Implementing measures to prevent loss or damage to life, property and resources and making the site secure and safe.
c. Authorising recovery procedures in order to provide an operational service to staff and clients.
d. Disseminating information to the public through the news media;
e. Ordering and acquiring replacement equipment where so authorised.
f. Keeping control of expenditure arising out of recovery operations.
g. Organising the return to normality once the emergency period has passed.

Chief Executive Officer

Issues public announcements, organises the implementation of replacement of hardware/software and communications links.

Initiation of legal compliance and risk assessment.

Works Manager.

Organises salvage, site security and the acquisition of alternative accommodation.

Organises the replacement of damaged equipment and supplies.

PLAN ACTIVATION

The activation of the disaster plan is broken down into three phases:

a. Initial activation.
b. The evaluation phase.
c. Full activation.

Initial Activation

Out of hours the plan will be activated by the EMT leader on receipt of information of the incident requiring action.

During office hours normal emergency procedures will be followed and the immediate situation managed by the Manager of the area affected. He/she will then contact the Emergency Management Team leader.

Contact phone numbers for all EMT members and selected staff within the Council are contained in the Emergency Contact Directory.

Evaluation Phase. If not already on site the EMT leader contacted will make his/her way to the scene in order to make an initial evaluation of the extent of the damage. The other members of the EMT will be placed on standby at this stage. Depending on the level of damage, the EMT leader will either take no further action or will initiate full activation.

Full Activation.

If the plan is fully activated the EMT leader will carry out the following actions:

a. Instruct the EMT meet at the Council Chambers or other nominated location or alternative location away from Depot.

b. Instruct one of the EMT members to contact the Council staff affected and move to the site.

c. Open a log of events.

d. Contact the Insurance Officer.

e. Start preparing a preliminary verbal report.

All EMT members will alert and deploy the supporting members of their respective functional groups in accordance with this plan.

Action Checklists.

EMT checklists are shown as follows:

a. Immediate action: ANNEX A
b. Action taken during next three hours: ANNEX A - 1
c. Action taken during next twenty-four hours: ANNEX A - 2
d. Action taken during the next month: ANNEX A - 3

STAFF AND PUBLIC ANNOUNCEMENTS

The Chief Executive Officer will be responsible for keeping staff and the public informed throughout the recovery period. The Chief Executive Officer will use the media, website (in conjunction with the website manager) and any other appropriate communications channel to:

a. Tell all Council Staff what further action they need to take in accordance with their response team allocation. Cards issued to staff are shown at Appendix 1 to Annex C. A sample message for staff is at Appendix 2 to ANNEX C.

b. Keep members of the public informed about the effect the incident will have on services.

The Chief Executive Officer will seek to provide at the earliest opportunity a central point of contact for all customer enquiries relating to council business. The Chief Executive Officer will liaise with the information coordinator about publicising relevant contact details (telephone numbers, web addresses etc).

AREA - RESOURCE REQUIREMENTS

Area functions have been categorised against the following list of priorities:-

a. One - essential core business and supporting functions needing to be restored in the shortest possible time.

b. Two - important core business and supporting functions needing to be restored within an established time frame.

c. Three - loss which would have no immediate impact on the department's service delivery but which needs to be restored in the longer term.

SUPPORTING INSTRUCTIONS

The following general guidelines will apply:

Authorised Expenditure

The Chief Executive Officer will authorise any expenditure needed for the prevention of further loss of life or injury, or loss or damage to property and assets and authorise the expenditure necessary for making sites secure and safe. Records of expenditure relating to the incident should be kept using the format contained at Annex D and Annex D-1 to this plan.

Cash

Although the normal procedures of official orders, invoicing and creditor payments should apply, where immediate or cash payments are required, these can be arranged through the Chief Executive Officer.

Insurance

Before ordering the replacement of high value assets the Chief Executive Officer should first be consulted in order to clarify the terms of existing cover.

SALVAGE

In the immediate aftermath of a serious incident there will be a requirement to initiate salvage operations and the repair of items contained in the damaged area. An inventory of usable equipment, furnishings, documents and supplies, will need to be compiled. Area heads will therefore need to nominate staff who can work alongside professional salvors.

Important salvage information is contained in the following annexes:

a.	Main problems/safety	Annex E
b.	Damaged documents	Annex E - 1
c.	Damaged computer and communications equipment	Annex E - 2

ALTERNATE LOCATIONS

The EMT and key service delivery staff will deploy to the Community Sports complex. A list of the EMT and key team staff totals required to maintain the basic service delivery of the Council is at Annex C.

RESOURCE LISTS

Areas are responsible for identifying their own specialist resource requirements and including the information in their respective department plans.

COMPANY CONTACTS

Name	Contact	Other Contact Details
Terry Barnes (Team Leader) (CEO)	0427 865 812	Work 86292019,
Bernadette Clelland (back up to T/Leader)	0414 335 048	Work 86292019, Home 86292640
Darren Zechner (Works Manager)	0427 973 219	Work 86292019
Brenton Heath (back up to W/Manager)	0417 843 235	Home 86292145
Julie Beinke (Admin Officer)	0408 856 808	Work 86292019,

SUPPLIERS CONTACTS

Company	Address	Contact	Phone Numbers
IT Vision		Vicky/Sebastian	8354 3366/8354 1617
Caramel Computing			1300559100
Local Government Risk Services	Whyalla	Julie Beaton	0427 185 604
Police	Cowell		8629 2029
ETSA			13 12 45
SA Water	Cleve		8628 2116
Telstra			12 51 11
West Coast Security	Pt Lincoln		8682 1155

ANNEX A EMT - IMMEDIATE ACTION

1. Depending on the information received, the Emergency Management Team Leader will arrange for the following actions to be taken:

    a. Place other members of the team on standby and/or instruct them to move to the site;

    b. Move to the site and make an assessment of damage done and site security;

    c. Open a log of events;

    d. Advise the Insurance Officer;

    e. Make a preliminary (verbal) report to senior management.

2. Team members will alert and deploy other members of their functional groups, as necessary.

3. The Team Leader will then call for an initial meeting of the EMT with the following objectives:

    a. To define the problem, the extent of disruption, its consequences and the probable implications for the foreseeable future.

    b. To select a specified location as an operations centre.

    c. To agree each team members objectives for the following three hours.

    d. To set up a second meeting for three hours later.

4. The Team Leader will then make a second, more detailed report to senior management on actions being taken, future intentions and help required.

ANNEX A - 1

EMT - ACTION TAKEN DURING NEXT THREE HOURS	Lead
1. Establish the operations centre either on or off site	Team Leader
2. Use the centre as the main point of contact for the emergency services, public utilities, senior management, staff, clients and Insurance Officer.	All
3. Take over the incident log from the Team Leader. Issue announcements to staff, clients and the media (See Annex).	Admin Officer
4. Undertake a site survey with area managers. Main points: – Which units can use the site immediately? – Which units can use the site after cosmetic attention? – When can they re-occupy the site? – Which units cannot be re-housed in the short term? – What amount of office space is required for priority one functions – Which priority one functions can share accommodation on a temporary basis? – Decide outline strategy for re-occupation of and/or re-deployment to an alternative site.	Works Manager
5. Organise safety survey and arrangements to make the site secure	Team Leader
6. Consider salvage options.	Works Manager
7. After consultation with the EMT Team, assess the effect of the incident on critical business functions and start planning the order of their reinstatement in accordance with pre-planned priorities.	Team Leader
8. Contact IT Operational Support Staff and alert them to possible action.	Team Leader
9. Assess the impact on the telephone network and make contact with appropriate staff and agencies required to reinstate networks.	Team Leader
10. Liaise with area managers and/or their IT staff to assess the impact on IT hard/software, peripherals and network installations: a. decide what is reinstateable using in-house resources; b. which equipment will require external services for reinstatement; c. plan and implement the initial in-house deployment of supporting staff; d. alert staff and suppliers of the increasing demands to be made on them.	Team Leader
11. Liaise with areas and make an initial assessment about the replenishment of damaged furniture, fittings, equipment and supplies. Alert staff and suppliers of the likely demands on them.	Works Manager
12. The Team Leader will chair a second meeting of the recovery team after three hours with the following objectives: a. to receive initial reports; b. to agree to objectives for the next 24 hours; c. to establish staff rotas; d. to set up a third meeting for 24 hours later.	Team Leader
13. Start and maintain a record of financial expenditure and collate information as may be required by the Insurance Officer. Cost code to be allocated.	All

ANNEX A - 2

ACTION TAKEN DURING THE NEXT 24 HOURS	Lead
1. Continue to maintain log of events and keep staff, clients and Communications/ news media regularly updated.	Admin Officer
2. EITHER plan the re-allocation of office space on site in accordance with area priorities identified in Part 2 of the plan OR plan to move to an alternative site. Consider the following points: a. contact with commercial estate agents to acquire alternative site; b. transport arrangements to and from all temporary locations; c. the removal of vital documents from the disaster site and subsequent storage; d. the removal of re-usable equipment from the disaster site and subsequent storage; e. space requirement for critical business functions; f. feeding and welfare arrangements.	Works Manager
3. Agree on essential installation schedules with public utilities and other suppliers at either the disaster site or alternative site (electricity, heating, lighting, water, air conditioning, fire detection/alarm systems, access control systems, telephones).	Works Manager
4. Agree on office equipment and supplies delivery schedules with Suppliers	Works Manager
5. Check on measures being taken for disaster site safety and security	Works Manager
6. Implement salvage plan and arrange temporary storage as necessary.	Works Manager
7. Reorganise postal arrangements as necessary.	Team Leader
8. Finalise telecommunications services to the required site(s).	Team Leader
9. Define the priorities for restoring networks on a gradual basis in order to provide a minimum initial communications requirement for departmental critical functions.	Team Leader
10. Prepare to initiate interim back-up procedures for priority systems.	Team Leader
11. Finalise requirements for hardware/software and peripherals replacements and agree on installation schedules.	Team Leader
12. Consolidate with core team members arrangements for reinstating critical business functions in priority order whether on-site or at alternative premises. Brief staff accordingly.	Works Manager
13. Ensure that clients are re-assured that service delivery will be returned to normality as soon as possible.	As above
14. Hold a third meeting after 24 hours to finalise plans and/or monitor progress.	Team Leader

ANNEX A – 3

ACTION TAKEN DURING THE NEXT MONTH	Lead
1. Continue internal and external announcements as necessary and the record of events.	Admin Officer
2. Continue to keep financial records.	All
3. Monitor the installation/repair of essential services to the disaster site/alternative site (electricity, heating, lighting, water, air conditioning, fire detection, alarm systems, access, control systems, telephones).	Works Manager
4. Continue removal and re-deployment of salvaged items from the disaster site.	Works Manager
5. Monitor measures being taken for disaster site safety and security.	Works Manager
6. Maintain liaison with the Insurance Officer.	Team Leader
7. Ensure that the telecommunications network is tested and operates. Continue to provide support/re-configuration to departments when required.	Team Leader
8. Monitor the programme for the installation and back-up of IT networks, hardware/software and peripherals in the agreed order of priority.	Team Leader
9. Monitor the programme for the delivery of supplies to the disaster/alternative site.	Team Leader
10. Monitor the reinstatement of functions in order of priority and the consequent effects on service delivery.	Works Manager
11. Monitor overall progress on a regular basis.	Team Leader
12. Co-ordinate interim and/or final report drafting.	Team Leader
13. Council will need to consider staff welfare issues. Many staff may be upset by the event, may have lost colleagues, personal belongings etc during an event, may have to be working from an alternative location after an event etc. In the first few weeks everyone 'gets on with it', but after that is when issues might start arising. Utilisation of counselling services from Whyalla as appropriate.	Team Leader

ANNEX B Council Service Priorities List

Office

Procure new Computer
Setup computer network
Establish Phone Network
Install and setup IT Vision computer programme
Salvage paper and electronic records

Depot

Procure new Computer
Setup computer network
Establish Phone Network
Salvage paper and electronic records

ANNEX C Emergency Management Team

Chief Executive Officer (Team Leader) – Finance Manager for back up
Finance Manager
Works Manager (Works Supervisor as back up)
Administration Officer (2nd admin officer as back up)
Any other persons deemed necessary by the Team Leader

Appendix 1 to Annex C

TEAM:	Emergency Management Team	
NAME	**APPOINTMENT**	**AREA**
ACTION		
On notification of an incident all team members should remain at home and await further instructions from the Team Leader. As the situation improves staff will be called back to work as and when appropriate.		
GENERAL POINTS		
1. Notification may be via telephone or through the media. 2. **Do not** attempt to travel to the Depot 3. **Do not** attempt to phone the Council Switchboard.		

Appendix 2 to Annex C SAMPLE MESSAGE TO STAFF

1. This is ..... (name) from .....(area).

   There has been an incident at Council Depot and ..... (describe what has happened).

2. The Council will continue business; the Council Business Continuity plan is being put into operation.

3. All jobs should be safe.

4. Payment of your salary should not be affected.

5. Please don't go to the office.

6. In the short term, you will be working under ..... (team leader), on

   ..... (task), until we get back to normal.

7. Please wear .....

   Please bring ..... (depending on situation).

8. Because this is an emergency, will you be prepared to work overtime? ..... (details of shifts over the next week).

9. Will anything prevent you from working these hours, and if so, is there anything we could do to help?

10. Payment for overtime will be confirmed at a later date.

11. If you have any further queries, the number to telephone is ..... (emergency staff number).

ANNEX D DISASTER RECOVERY FINANCIAL RECORD PURCHASES

DATE	TIME	LOCATION	DESCRIPTION OF ITEM	REASON FOR PURCHASE SUPPLIER/	SUPPLIER/PURCHASER	$

ANNEX D – 1 DISASTER RECOVERY FINANCIAL RECORD SALES

DATE	TIME	LOCATION	DESCRIPTION OF ITEM	REASON FOR PURCHASE SUPPLIER/	SUPPLIER/PURCHASER	$

ANNEX E SALVAGE - MAIN PROBLEMS/SAFETY

1. **General: Apart from the obvious and visible damage, those involved in the salvage process need to be aware of:**

    a. Health and safety problems such as chemical contamination, asbestos and live electricity supplies.

    b. Deterioration of materials through high humidity or chemical attack:

        (1) Hydrochloric acid arising from the combustion of PVC can penetrate concrete in wet conditions and cause corrosion of the reinforcing steel.

        (2) Hydrochloric acid will also quickly corrode any exposed metal surface, such as steel pipes, tubes galvanised conduits, cable trays, trunking, aluminium partitions and window frames. Removal of the corrosion product and the chloride contamination is all that is required to restore the item to full function and to ensure that no further deterioration will occur.

        (3) After a fire, clean-up materials used in fighting the fire (water, halon, foam, dry powder).

    c. Dirt and contamination can spread from damaged parts of a building to clean parts.

    d. Theft from the damaged building.

    e. On-going damage from wind and rain.

    f. A repeat attack if damage was caused deliberately.

2. **Entry to Buildings/Rooms:**

    a. Do not enter any damaged building until it has been declared safe by both the Fire Service and the Building Inspector.

    b. Allow only authorised personnel wearing appropriate protective clothing to enter.

    c. Cut off all power supplies to the damaged area.

    d. Check for hazards.

    e. Identify and protect any evidence of deliberate damage.

    f. Cut off the water supply to leaking pipes

    g. Make safe damaged structures: erect safety barriers, hazard signs and identify walk routes.

    h. Protect undamaged equipment: cocoon in polythene.

3. Rooms containing Computer Equipment:

1. Ensure that all power is turned off.
2. Protect undamaged equipment (cocoon or remove carefully).
3. Remove surface dust debris soot with brush or vacuum cleaner.
4. Remove water and start drying process.
5. Consult Salvage Engineer on the next step.

4. Resumption of Operations:

a. Ensure safe, controlled access.

b. Protect from weather.

c. Recover materials and dispose of waste.

d. Nominate temporary accommodation for storage of undamaged/damaged equipment and records.

e. Arrange for safe temporary power supplies.

f. If air-conditioning or heating is available, raise the temperature.

g. Provide ventilation to aid drying.

h. Maintain an inventory of equipment damaged/lost and replaced/repaired.

i. Arrange for demolition and site clearance.

ANNEX E – 1 DAMAGED DOCUMENTS

1. **General:** Documents are easily damaged by fire and water, but recovery of the information is often possible and sometimes even the recovery of the documents themselves is possible.

2. **Types of Documents:** Documents can be broken down into four categories:

    a. **Record or information retrieval ('loose' documents):** Record retrieval can be summarised as the relatively simple act of recovering the information which is recorded, without need of the original document. In this instance a photocopy or an electronic record will suffice.

    b. **Original document retrieval ('loose' documents):** Original document retrieval involves retention of the original document as the valid record. This may be because of a legal or similar statutory requirement.

    c. **Book retrieval ('tight' documents):** Book retrieval is where the 'victims' are bound volumes which are unlikely to have been deeply penetrated by the smoke fumes and/or water.

    d. **Art paper retrieval ('tight' documents):** Art paper or coated paper which has been finished to a high gloss or treated in some other special manner presents a particular problem. Once this type of paper gets damp and begins to dry the leaves fuse together and become permanently bonded.

    Whatever the category, the aim behind all document recovery is to reinstate documents that can be read, handled and stored.

3. Main Problems

    a. Mould will begin to appear within 48 hours in moist conditions, if the temperature is above 60 c, and removal of the marks left by mould is almost impossible.

    b. Wet paper is very heavy and is very easily damaged by handling.

    c. It is an unpleasant job, as documents to be recovered are dirty, wet and smelly.

    d. Possible health problems for people doing the job, from polluted water and from dangerous dust.

    e. Logistic problems of separating each page to dry, then re-assembling the documents correctly.

4. **Remedial Action:** Successful recovery of documents is dependent upon prompt initial actions:

    a. Prevent uncontrolled drying or crumbling, by keeping documents closed and gently wrapping them in cling film. Store the sealed documents temporarily in archival sized boxes to aid handling and identification.

b. Freeze the documents. This both prevents mould growth and protects against damage while handling. A commercial frozen food trailer provides a useful first-aid cool chamber, and can be obtained via the Emergency Planning Section.

c. Get professional advice and help as soon as practicable.

ANNEX E – 2 DAMAGED COMPUTER AND COMMUNICATIONS EQUIPMENT

1. General Rules:

a. It is vital that in the event of damage to computer and communications systems, caused by fire, smoke, water, chemicals etc., qualified engineers take remedial action as soon as possible.

The speed with which corrosion damage occurs will depend on the conditions. In extreme conditions of heavy contamination in a hot, moist environment, it is vital that salvage begins no later than 24 hours after the incident has occurred. In warm, dry conditions, unpowered equipment will resist corrosion for a long time.

In either case it should not be assumed that equipment is a total loss just because there has been a delay.

b. The following general rules will help to minimise the damage caused:

(1) **Do not switch on equipment** which may be damaged, wet or contaminated (even for a few seconds to see whether it works) as this will cause power supply problems such as to on-board batteries.
(2) Do not move damaged or contaminated equipment unless absolutely necessary. If you do move it, handle it as carefully as possible.

2. After Fire: Even a relatively small **fire** can cause serious contamination problems.

a. Main Problems:

(1) Heat from fire will cause direct damage, but electronic equipment will stand temperatures up to 700 c if switched off. If there is still paint on metal parts and plastic parts have not melted, the equipment may still be recoverable. Any water used for freighting on upper floors will lead to dirt and acid contamination on lower floors.

(2) Soot (carbon particles) will absorb water, creating a moist environment which helps corrosion. It will settle on circuits and components inside equipment and cause short-circuits if electronic power is applied.

(3) PVC is a plastic which is used extensively in modern buildings, in cable insulation, furniture, document binders etc. When PVC is burned it produces a large volume of hydrogen chloride gas which combined with airborne water vapour to form hydrochloric acid (a kilogram of PVC will produce 1.4 litres of concentrated acid). The acid condenses on cool surfaces throughout the building which contains the fire, including circuit boards inside equipment in areas which seem to be little affected by smoke.

(4) Unpowered circuits are reasonably resistant to attack but any electrical activity will cause shorting and electroplating. Exposed metal surfaces (steel, stainless steel, galvanised steel, aluminium, brass, copper) will corrode rapidly. Water and humid air greatly increases the rate of corrosion.

Remedial Action:

(1) Ventilate the whole building as soon as possible in order to disperse smoke and other contaminants.

(2) Remove or isolate the power including battery back-up supplies.

(3) Lower relative humidity to minimise corrosion. Fan heaters with dehumidifiers are a good combination, but be careful not to make equipment too hot. Do not use oil stores or propane gas heaters, as these generate water vapour.

(4) Cover items that cannot be removed with plastic sheeting, and place dehumidifiers under the sheeting.

After Water Damage:

a. Main Problems:

(1) Dirty water, sludge and possibly chemical contaminants will have breached the casings of computers and communication equipment. This will cause damaging short circuits if the equipment is powered up, and the dampness will speed up corrosion.

(2) Water may have soaked into the fabric of the building, maintaining a high level of humidity long after the water has been removed.

b. **Remedial Action:** The main requirement is to minimise corrosion until equipment can be washed, by removing water and then lowering the relative humidity of air below 450. The following points should be followed.

(1) Remove or isolate all power, including battery back-up supplies to prevent shorting.

(2) Tilt equipment so that water runs off the circuit boards and out of the equipment.

(3) Carefully remove portable equipment to a clean dry area.

(4) Cover any items that cannot be moved with plastic sheeting to protect from falling water.

(5) Ventilate the affected area.

(6) Remove wet objects that will retain water, such as carpets, curtains and paper.

(7) Use dehumidifiers to remove moisture from affected areas.