Architects Advisory Service

Flood Recovery - Safety Advice

This Fact Sheet is intended to provide detailed information that needs to be considered by anyone whose home has sustained flood damage. Our hope is that it will help people to make decisions for the future in relation to repairing, rebuilding or relocating their home.

Site Safety

Apart from the impact of fast moving water, hazards of entering or coming into contact with floodwater are many. These hazards can typically be grouped into the following:

- **Electrical Hazards:** Switchboards, power points, appliances that have been inundated with floodwater.
- **Biological Hazards:** Water is likely to have been contaminated through inoperable waste water treatment plants or sewer system flooding and backup (this does not include potable water supplies). There is also a greater risk of Tetanus exposure and exposure to airborne and surfaces moulds / fungi.
- **Chemical Hazards:** Water is likely to have been contaminated with chemicals such as fuels (petrol/diesel), cleaning products and any range of industrial products that may have been caught in the rising floodwater.
- **Physical Hazards:** Hazards associated with objects being damaged and potentially submerged beneath floodwater. There is also a risk of slips/falls from walking through silt that has been left behind after the flood.
- **Structural Hazards**: Building foundations may have been compromised by the flood waters and this may not be apparent without detailed inspection by a structural engineer.

Please note the above hazard categories are by no means a full list of the hazards that may be present as this will depend on the location and flood levels experienced.

Flood Cleanup Risks

If you are one of the many people/businesses involved in the flood cleanup process, please consider the following questions and how you will manage any risk to yourself, staff, contractors or volunteers.

Removing Pooled Flood Water

- Are you using petrol/diesel/LPG powered pumps/generators in a confined area (i.e. car park) to remove water? If so, have you considered the risk of carbon monoxide accumulating in these areas? (Remember, carbon monoxide is colourless, odourless and difficult to detect).
- Is the water likely to contain petrol/diesel from submerged vehicles or storage tanks? If so, have you considered how you will make

sure you are not exposed to elevated concentrations of airborne vapour or the possibility of a fire or explosion?
- Are you required to walk into floodwaters to install pumps or inspect buildings / equipment? If so, have you decided how to do this safely (i.e. without falling into voids, tripping on submerged items, etc.). Have you also confirmed what personal protective equipment is required to prevent skin / wound exposure from contaminated water?

Cleaning Up Flood Damaged Buildings and Equipment

- Have you had the building certified as safe by a qualified electrician and a structural engineer before you commence any works?
- Are you required to walk through silt that has accumulated after the water receded and how will you manage the risk of slipping or contaminating your street clothes?
- Does your building contain hazardous materials (e.g. asbestos) that have been affected by floodwater and how will you manage the risk of removing this material safely?
- Are you cleaning personal belongings and equipment and how will you prevent hand to mouth transfer of contaminated silt and water?
- Are you using a hazardous chemical to clean surfaces and how will you ensure that persons are not overexposed to these chemicals (e.g. chlorine)?
- As there is a lot of manual handling of damaged goods, accumulated silt, etc, how will you ensure the safety of persons undertaking continual lifting and moving of items?
- Are you required to work in the sun whilst undertaking cleanup activities and have you considered heat stress/dehydration, sun exposure, etc?
- Are you working in a location where snakes or other displaced insects/animals may be present?
- Do you need to work adjacent to, or on, a roadway and how will you manage the risk of being struck by a vehicle?

It is important to remember that even though the floodwaters have receded we still face numerous risks throughout the cleanup process.

We all have a duty of care to minimise the risk to ourselves and others who may be involved in the cleanup process and particularly where you have some degree of control over the safety of others.

Electrical Safety

Cleaning up after flooding is a challenging time and you may be faced with dangerous and hazardous situations. It's important to stay safe while you're cleaning up your property.

Hazards may include electrical dangers in both domestic and work situations and general cleanup issues requiring the use of protective clothing and special procedures such as those for asbestos removal.

Residents of flood-affected areas should take precautions to prevent electrocution or injuries from electricity.

- Continue to listen to your local radio station for official warnings and advice.
- If your incoming power from the street has come down or your underground service pillar has been flood damaged, contact your local electricity distribution entity and keep clear of fallen, low or damaged powerlines.
- To check the electrical safety of the rest of your property (i.e. the house and garage wiring etc) call a licensed electrical contractor to inspect and carry out verification tests on your switchboard, wiring, equipment and appliances. Ask for a certificate of test.
- Once a contractor has provided written advice to your local electrical distribution entity that it is safe to do so, they will reconnect electricity as soon as possible.

Find a licensed electrical contractor:

- Yellow pages
- Master Electricians Australia
- National Electrical and Communication
- Association

Outside your Home

- Keep clear of trailing electrical cables, foil insulation or other conductive material that may be lying around your house – they may be carrying an electrical current.
- Be aware of electrical signs, street lights and other metal electrical items on the street as they may be damaged and carrying an electrical current.

Powerlines

- Stay well clear of any fallen or low powerlines taking particular caution if travelling in a boat in flooded areas. Warn others to do the same.
- Report any fallen, low or damaged lines to the emergency services or the local electricity distribution entity.

House Switchboards

- Stay away from switchboards if they are damaged by water, fire or if lightning is close and warn others to do the same.
- If mains power is lost report this to the local electricity distribution entity.

Electrical Work

- Do not do your own electrical work at any time, under any circumstances. This could result in life-threatening injuries.

Electrical Appliances & Equipment

- If your house or business has been affected by floodwaters, electrical equipment, wiring and appliances may have been damaged.
- Using water-damaged equipment can result in electric shocks and fires.
- Electrical authorities recommend disposing of water-affected household electrical items, such as kettles and toasters, rather than taking the risk of an accident occurring.
- Dispose of water-affected appliances appropriately – render them unusable by twisting off the pins from the plug top. Do not cut the plug top off, as this would present an unsafe situation if someone plugged it into a power point.
- Get a licensed electrical contractor to check all water-affected electrical equipment, wiring and appliances such as air conditioning units, intended for re-use.

This would be at the owner's expense, but is well worth it in terms of safety and peace of mind, and may be essential before the power supply can be reconnected.

Generators

- People using portable generators after a network power failure should be aware that power from generators can be dangerous if used incorrectly.
- Portable generators should only be used to power essential equipment, such as fridges.
- Do not connect the generator to your house electrical wiring unless a proper generator change-over switch and appropriate socket have already been installed by a licensed electrical contractor.
- Do not connect your generator to your house using a power point on a power circuit or any other connection point. This is illegal and dangerous. This could energise the powerlines and cause an electric shock to anyone coming into contact with them.
- Also, plugging the generator into your house circuit could cause the generator to fail and cause a fire, or damage the generator and circuits.
- Ensure all leads used to connect your generator are in good working condition (i.e. no damage to plugs or lead and no exposed wires).

- Only use power boards with an overload cut-out switch.
- Place leads and power boards so they will not be affected by mechanical damage (stepped on, tripping, etc), flooding, or fire (coiled leads, overload).
- Be aware of risks, including electrocution, and poisoning/suffocation from carbon monoxide exhaust gases.
- Always run the generator outdoors or in a well-ventilated area, don't exceed the generator's load rating, and follow the manufacturer's instructions.

Occupant Safety - Moving back in

Occasionally a house will be able to be lived in while the restoration and repair work is being carried out. A house can be lived in when:

- The structure has been signed off as safe by a structural engineer

Important Note: No decisions should be made regarding the occupation of the building until independent, written advice has been provided by a registered structural engineer. A structural engineer is the only person qualified to provide you with this advice.

- Living there will not constitute a health risk
- The initial clean-up of water, mud and debris is completed
- The power supply has been safely restored
- All sources of potable water supply and sewage systems have been checked, repaired if necessary tested and declare safe for the use
- The local authority lifts any “uninhabitable” notice place on the house.

Contamination

Floodwater is often contaminated by the presence of dead animals, savaged material, etc. Strict health precautions must be followed:

- bury all accumulations of faecal matter, animal bodies etc. as a first priority
- drink only purified water until the normal water supply is safely drinkable
- discard all food which has been exposed to the flood, except that in air tight containers
- carefully clean food containers before opening them. If the flood did not enter a relatively full freezer, the food may survive for about three days (without power) without loss of quality
- thawed food, if sound, should be cooked immediately and then frozen away
- keep small children during cleaning up
- use liberal amounts of disinfectant when cleaning, and wash hands thoroughly before eating, drinking or smoking
- disinfect cuts immediately and cover with a waterproof dressing
- thoroughly wash and cook all garden vegetables before eating

Please Note: The content for this Fact Sheet has been sourced from the following organisations:

- www.qld.gov.au
- www.bsa.qld.gov.au
- Noel Arnold & Associates Risk Management
- Consultants (www.noel-arnold.com.au)
- BRANZ (www.branz.co.nz)

Archicentre Australia extends its deepest sympathies to all those affected by the floods and hopes that this information is helpful.

If you would like to talk to an Archicentre Australia architect – a building expert - about a particular matter, please call Archicentre Australia on 1300 13 45 13 or go to www.archicentreaustralia.com.au

