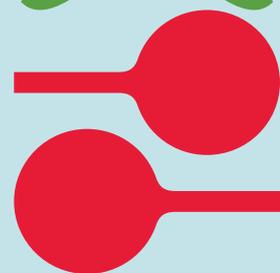


Creating a flood resilient home



A guide for homeowners wanting to reduce the impacts of flooding on their property.



What is a flood resilient home?

A flood resilient home is designed, constructed or modified to:

- improve safety
- ease entry and exit during a flood
- reduce water damage
- speed up recovery after a flood

About this guide

This guide provides practical solutions for homeowners wanting to improve their homes' resilience to floods.

The solutions are a guide only. To decide what is appropriate for you, please consider:

- Your house type and construction.
- Your flood risk level: what intensity of rain impacts your property - regular rainfall and low-level flooding or extreme rainfall with potential for extensive flooding?

There are two ways of making your home more resilient to floods in this guide:

1. Dry Proofing: Using materials and methods to prevent floodwater from entering your home.
2. Wet Proofing: Adapting your home or at risk rooms to minimise damage and moisture issues after flooding. This means you acknowledge that floodwater will enter your home.

In extreme cases, elevating your house above flood risk levels may be an option, though this is expensive and not suitable for all properties.

Consider your neighbours

When making changes to your property, avoid increasing the flood risk to others. It is illegal to intentionally redirect stormwater onto neighbouring properties. Water must be able to flow down its natural path, and any impacts must be managed by each property owner.

Benefits of a flood resilient home

When you make flood resilience improvements to your property you can:

- reduce the cost of flood-related repairs
- reduce the risk of health problems caused by dampness and mould
- have peace of mind knowing your property and its occupants are safer
- potentially achieve better financial returns when you sell your property

Renting?

If you're a tenant refer to the 'Preparing your property for flooding guide' for simple ways to protect your whānau and belongings from flooding.

Landlords are typically responsible for building and larger maintenance works. Understand your landlord's responsibilities by visiting www.tenancyservices.govt.nz and checking your lease or rental agreement.

Understanding your flood risk

Before you start, it's important to understand your flood risk. Use Auckland Council's Flood Viewer, your local knowledge, and consider the following questions before doing any work on your property.

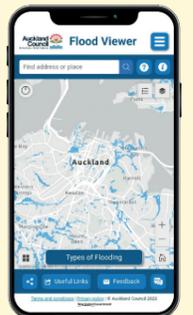
- How close is the house / property to streams, low points / depressions, overland flowpaths, flood plains, or flood-prone areas?
- What type of foundations, building materials and design features are used in the house?
- Does a land feature (e.g a slope) or localised landscaping (e.g a solid fence) contribute to flooding?
- Does the location of the house and position of entry points (doors, ranch-sliders, garages) contribute to flooding?
- Have you observed where floodwater flows, how high it rises and how fast it flows?

About Auckland Council's Flood Viewer

The Flood Viewer shows council's understanding of flood plains, overland flow paths, flood prone areas and coastal inundation risks. It also provides information, advice and videos on how to get prepared and reduce the risk of flood damage to your property.

We recommend checking the Flood Viewer periodically as information about your property can change as data is updated.

Scan the code or visit www.aucklandcouncil.govt.nz/floodviewer using your smartphone, computer or tablet.



Other ways to get flood information about a property

Apply for a LIM (Land Information Memorandum)

A LIM summarises what the council knows about a property, including flood-related details. LIMs can be applied for on the council website, or you can ask for help at one of our libraries.

Check other legal notices on the Record of Title

You can search and buy a record of title from the Land Information NZ website. Look for:

- Section 74 notice (Section 36 under the old Act).
- Consent notices
- Memorandum of encumbrances and easements relating to flooding or stormwater management devices.

About stormwater and floods in Tāmaki Makaurau Auckland

Stormwater flows across public and private land through open drains, culverts, and pipes as well as roads, overland flow paths, wetlands and streams, on its way to the sea.

By ensuring water can flow freely and safely through our neighbourhoods, we keep our whanau, properties, and communities safe during storms.

Who is responsible for maintaining the stormwater network?

The public stormwater network serves entire communities and is managed by Auckland Council, or Auckland Transport in some rural areas. This network includes drains, culverts, pipes, wetlands, overland flow paths and streams on public land. In some cases, public stormwater assets may run across or under private properties.

Private stormwater systems are pipes, drains, streams, overland flow paths, raintanks and soakage devices, on private property. Property owners must maintain their private systems within their property boundary and up to the point of connection to the public network.

Why does Tāmaki Makaurau | Auckland flood?

- The region is surrounded by water, built on a narrow isthmus with estuaries, rivers and thousands of streams and wetlands.
- As the city has grown, many streams were piped and channelled, and natural wetlands drained and buried altering the natural flow of water.
- An increase in hard surfaces e.g. roads and roofs combined with intense weather events, means more water flowing into the stormwater system.
- A disrupted climate leads to more frequent and intense storms, king tides, sea surges and rising sea levels.

These factors can all contribute to the stormwater system exceeding its capacity with many homes across Tāmaki Makaurau | Auckland experiencing flooding.

Using this guide

The following pages contain examples of building and structural improvements you can make to increase the flood resilience of your home and property.

By selecting the solutions that are right for your property, you can create a flood-resilient home, ensuring safety, reducing damage, and speeding up recovery after floods.

When making flood resilience improvements to your property, it's important to know that some modifications may require resource consent and they must also comply with building regulations. The Auckland Unitary Plan sets out rules to ensure changes do not negatively impact the environment. Additionally, under the Building Act 2004, any construction or alteration must meet standards in the Building Code for safety, health, and sustainability.

Before starting, check if your project needs consent by consulting the Auckland Council website, asking your builder or design professional. This will help ensure your improvements are legally compliant and environmentally responsible.

Insurance and flood resilient design

Check your existing insurance cover for flooding and consider discussing flood resilience with your insurer before starting any work on your property. Contact your insurance provider(s) for more information.



External solutions – or dry proofing

Key: The colour of the circle indicates the type of approach the solution uses.

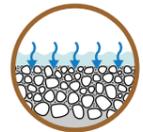
 Dry proofing  Wet proofing



Replace solid fences or carport screens with permeable fencing or screening and /or raise them to allow water to flow through and under. Solid fences and screens can cause ponding and divert water into your house. A solid fence can collapse under the weight of water and cause damage to neighbouring properties downstream.



Install more water resilient stairs with an open design that allows water to flow through. Solid stairs restrict water flow.



Replace hard surfaces (like concrete) with permeable materials such as permeable paving, gravel or grass to help slow, filter and absorb water.



Install a water tank to collect rainwater and ensure it is secured to the ground. Building and planning regulations apply.



Landscape or contour the ground and driveways to direct water away from doorways and buildings. Any works must not alter the flow, location or characteristics of the water as it passes a property boundary.



Install or upgrade catch pits and channel / slot drains near entrance ways to reduce low level flows into your home. Check with your design professional or Auckland Council's building helpdesk to confirm whether building consent may be required.



Keep overland flow paths on your property clear of items, structures and rubbish to maintain water flow.



Raise or move doorways, windows and other openings to parts of the building that are less susceptible to flooding.

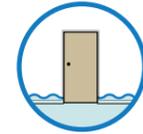


Raise outdoor electrical features like heat pump and air conditioning compressors, water tank pumps, switchboards and hot water units to reduce the chance of water damage and outages.

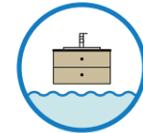
Internal solutions – or wet proofing



Consider installing more water resilient internal wall linings (like plywood).



Replace hollow core doors with solid core doors, which are more resilient to damage and the force of flood water.



Raise cabinetry. Higher, wall hung cabinets and storage shelves will reduce the risk of water damage.



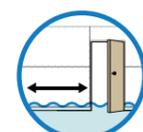
Replace cabinets with units made from flood resilient materials and make kick boards removable so cleaning and drying is easier after a flood.



Use an open design and flood resilient materials for internal stairs.



Replace cavity sliding doors with swing or wall sliding doors to help minimise water getting into the wall cavity.



Hang plaster board horizontally so the lower panel can be removed and replaced easily if damaged by water.



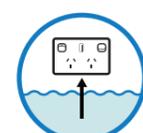
Use flood resilient flooring options like tiles, stone or brushed concrete



Install circuit breakers for lower floor electrical circuits to maintain electricity on upper floors if the ground floor floods.

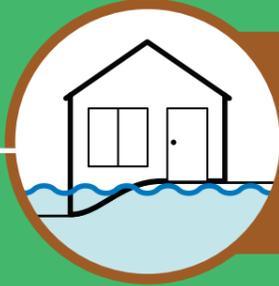


Install laundry appliances such as washing machines and dryers onto benches or wall brackets and raise kitchen appliances like ovens and microwaves to reduce the risk of flood damage.

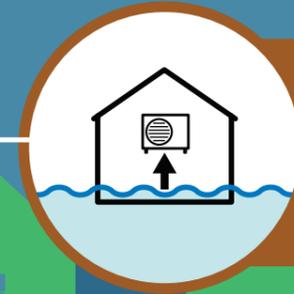


Raise data and electrical points (including multi-boxes and extension leads) to reduce the risk of power outages during a flood.

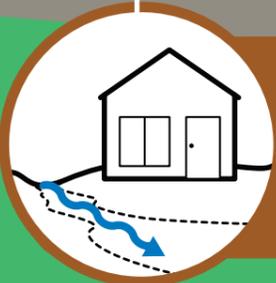
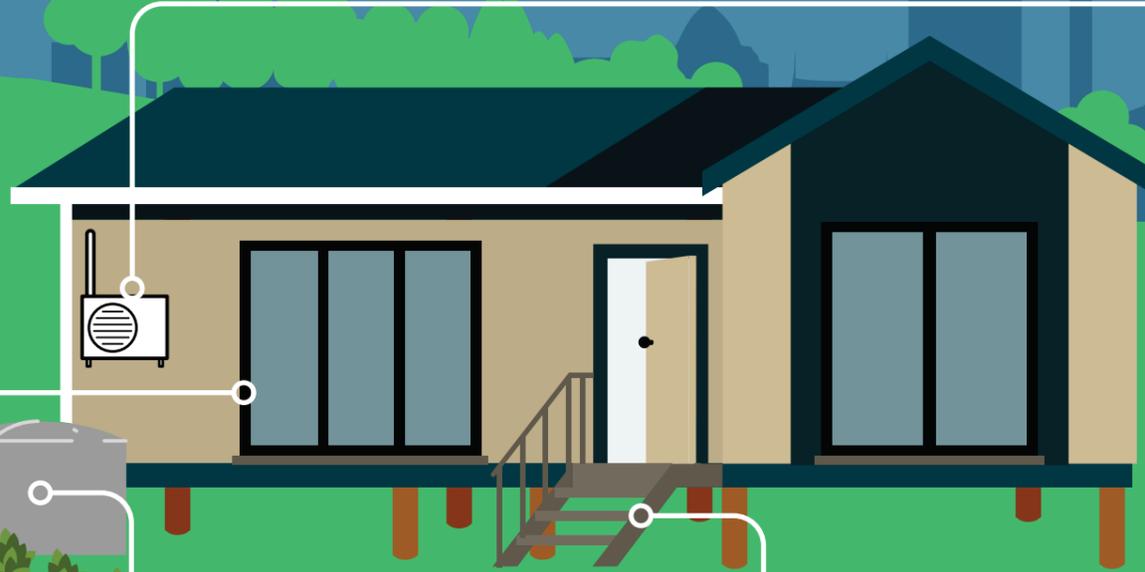
Dry-proofing solutions for your home



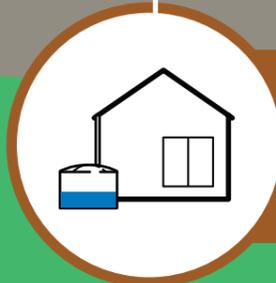
Raise or move doorways and windows to where they are less vulnerable to flooding.



Raise outside pumps and electrical services.



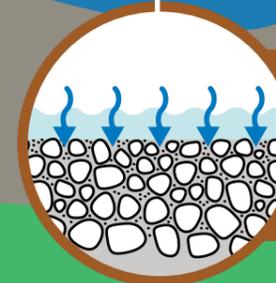
Landscape or contour the ground and driveways to direct water away from doorways and buildings.



Install and secure a water tank to collect rainwater.



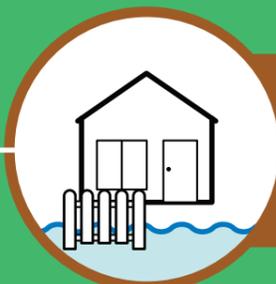
Install or upgrade catch pits and channel / slot drains near entrance ways.



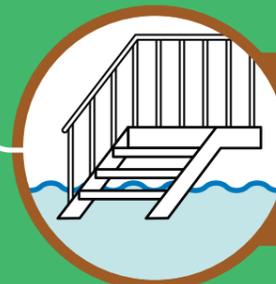
Replace hard surfaces (like concrete) with permeable materials.



Keep overland flow paths on your property clear.

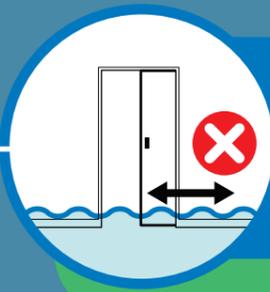


Lift or add gaps to fencing so water can flow through and underneath.



Replace solid stairs with an open design.

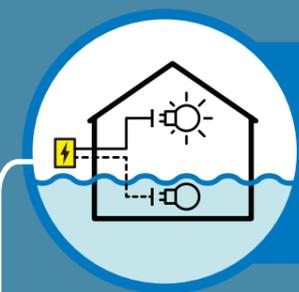
Wet-proofing solutions for your home



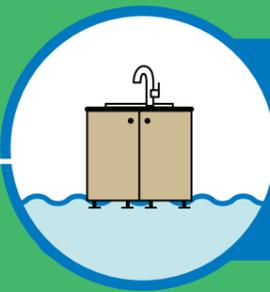
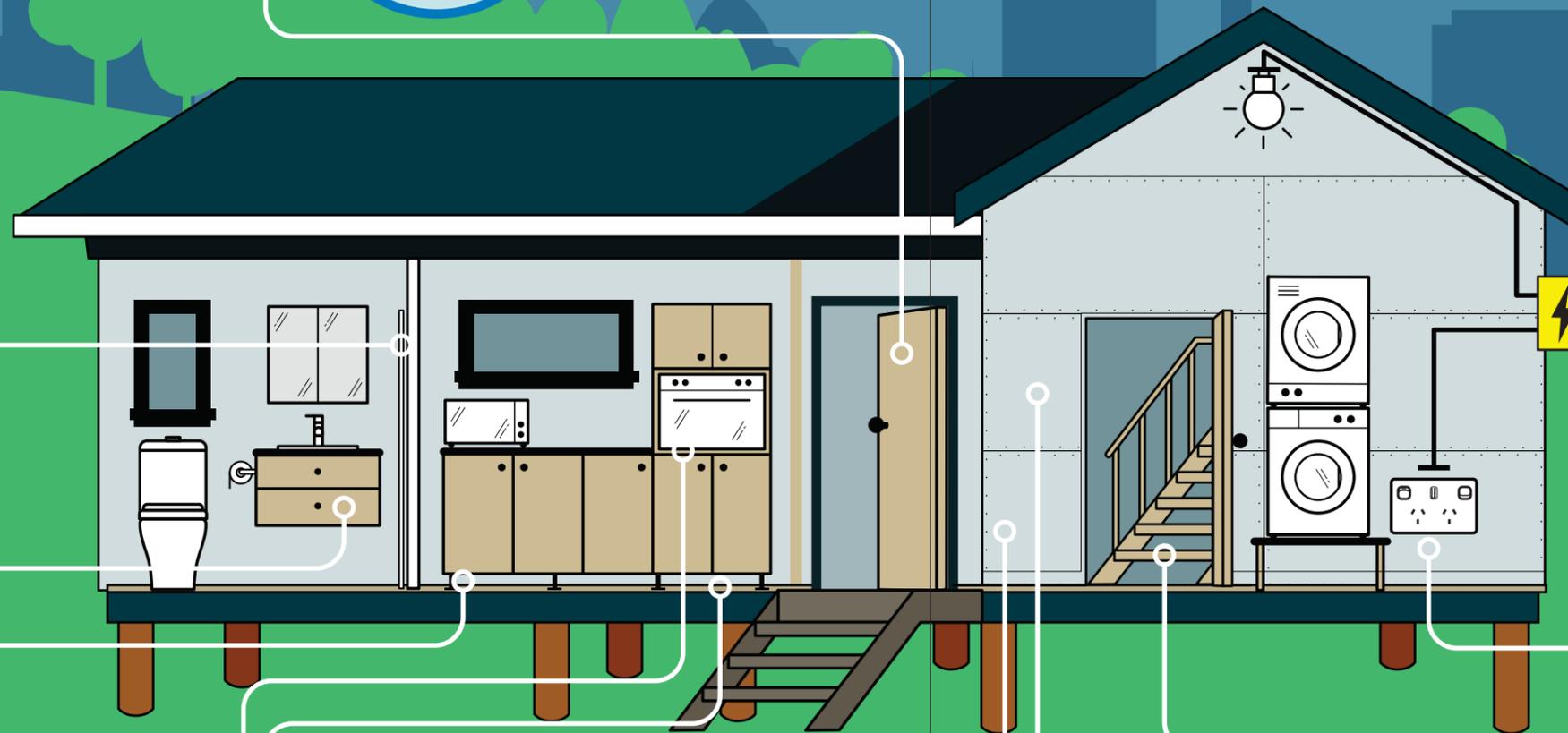
Replace cavity sliding doors with swing or wall sliding doors.



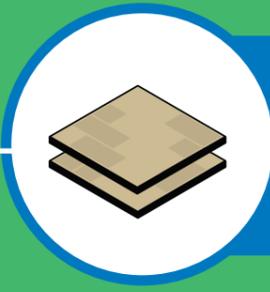
Replace hollow core doors with solid core doors.



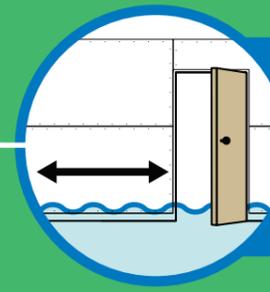
Install circuit breakers to separate power supply.



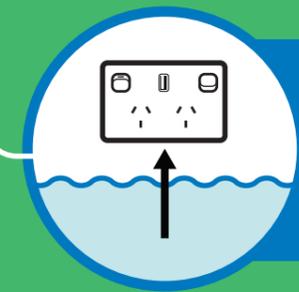
Install cabinets made from flood resilient materials with removable kick boards.



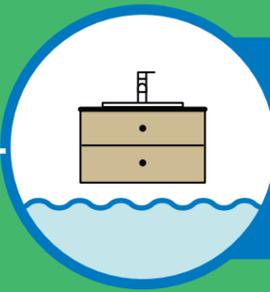
Use flood resilient flooring materials like tiles or polished concrete.



Hang plaster board horizontally.



Raise data and electrical points.



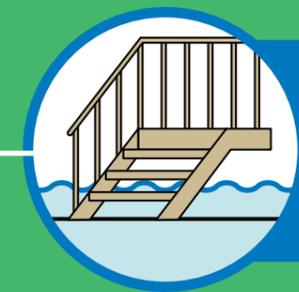
Raise or install wall hung cabinets.



Raise appliances like microwaves, ovens, washing machines and dryers.



Consider installing more water resilient internal wall linings (like plywood).



Use an open design and flood resilient materials for internal stairs.

Next Steps

This guide provides information about flooding in Tāmaki Makaurau | Auckland, the importance of flood resilience, and what improvements you can make around your home to reduce risk, inconvenience, cost, and damage.

Immediate Actions

- Check Auckland Council's Flood Viewer to identify your home's flood risk.
- Discuss flooding experiences and solutions with your neighbours and design professionals.
- Consult council's consents team about potential property improvements.
- Prepare for emergencies with a household emergency plan.

Things to discuss with your builder, registered plumber/drainlayer, engineer, landscaper, or architect:

- Potential flood hazards on your property.
- Ensuring planned works do not increase flood risk.
- Distance elevation or height from flood hazards to the building/works site.
- Methods to divert water away from buildings on your property.
- Costs and benefits of permeable products for water absorption.
- Water-resistant materials to protect your house.
- Required consents for the work.

Other useful information:

- **Visit the Get Prepared page on www.aucklandcouncil.govt.nz/floodviewer** for useful information on what to do when there's a storm:
- **Before:** Preparing your Property for Flooding guide
- **During:** How to stay safe
- **After:** Auckland Emergency Management info and support.

Reporting and Assistance

- To report stormwater flooding risks like blocked drains, culverts, catchpits, or grates, or to request an investigation following a flood or stormwater event, call Auckland Council on 09 301 0101.
- For drain or pipe blockages on private property, contact a registered plumber or drainlayer.

