

RESHAPING OUR REGION'S PLANNING

YOUR FLOOD SMART BUILDINGS GUIDELINE

FOR HOMES AND BUSINESSES

23

Flooding is a natural process. The City of Moreton Bay's subtropical climate, mountainous areas in the west and large catchments supporting rivers, creeks and low-lying coastal areas, mean that many people in the City will probably experience flooding of some kind in their lifetime.

This guideline will assist you in your decision making as you rebuild and retrofit your home and business building after flood damage or experiencing a flood.

**NOW IS THE TIME TO
RETROFIT YOUR BUILDING
WITH THE NEXT SEVERE
STORM AND FLOOD IN MIND.**

Being flood smart means changing the way you rebuild and the materials you use to potentially decrease damage the next time it floods. While it is not possible to completely avoid flooding, we can adapt our homes and business buildings to better prepare for future severe storms and flooding. By using flood resistant design ideas and materials it is possible to minimise life and work disruption during and after a flood event.

Don't just replace 'like for like'. A flood smart building doesn't have to be expensive; it's all about making smart choices. It's a common sense approach, but you should always make sure you work with licensed tradespeople and consult a registered engineer.

Before you start rebuilding and retrofitting, it's important to check how future flood hazards may affect your building. Don't just rely on what happened last time.

- 1. You can do a **free** flood check report on your home - mbrc.link/flood-check
- 2. You can do a **free** flood check development report to determine your 'Flood Planning Level' which will help you understand what height you should relocate your services to - mbrc.link/flood-check-development



1. Flood Check Report



2. Flood Check Development Report

You may need to increase your floor level above the 'Flood Planning Level' to reduce your risk further. Consider engaging a surveyor for a floor level survey. Consult building professionals to understand your best options going forward, this includes Registered Architects who can help you set a budget and help you rebuild better.

You may also require development or building approvals, depending upon the extent of your rebuilding and the overlays and zoning of your property. You can find information on permit requirements on the Queensland Building and Construction Commission website. Contact Council or consult a Town Planner for further advice.

We respectfully acknowledge the Traditional Country across our City. We also acknowledge and pay our respects to the Kabi Kabi, Jinibara and Turrbal Traditional Custodians, and their elders past, present and emerging.

Reshaping Our Region's Planning
Your Flood Smart Building Guideline
Revision 1.1
February 2024

Disclaimer:

- 1. This guide is not a statutory document. It has been prepared as a tool to assist homeowners, designers and developers to improve the flood resilience of buildings.
- 2. Images, graphics and other illustrations depicted in this guide are for demonstration purposes only and are not intended to represent a specific design or existing house.
- 3. The specific circumstances of your chosen home design, lot and personal needs should be considered alongside design principles described in this document.
- 4. Submission of a development application, copying or recreating any design from the examples or illustrations in this guide does not guarantee approval. Each development application should consider site specific elements and constraints along with street and neighbourhood context. Each application is assessed on individual merit against statutory planning and building assessment provisions.

YOUR FLOOD SMART BUILDING

This guide is for anyone whose home or building was affected by flood, or is located in a flood area, and would like to adapt their home or building to be more flood smart.

**YOU WILL NEED TO
CONSIDER:**

INSIDE YOUR BUILDING

OUTSIDE YOUR BUILDING

YOUR YARD

**RETROFIT FOR FLOOD
RESILIENCE BY:**

- **RAISING**
- **REPLACING**
- **RETHINKING**



THE MORETON BAY CLIMATE

The City of Moreton Bay is located in the “humid subtropical zone”. Our subtropical climate allows us to experience hot and humid summers and mild winters, which allows us to spend a lot of time outdoors comfortably. But, our subtropical climate also means we experience severe storms and flooding. Storms are more common than any other natural hazard in the Moreton Bay City. While we can’t prevent severe weather and floods, we can prepare for them.

The City of Moreton Bay’s terrain is diverse; it includes undulating coastal plain to the east and is bordered to the west by the higher country of the Conondale and D’Aguilar Ranges. The City also encompasses the flood plains of the Caboolture, Pine and Stanley Rivers with numerous tributaries and dammed lakes at Lake Kurwongbah and Lake Samsonvale.

FLOODING IN THE CITY OF MORETON BAY

Moreton Bay City has a history of river flooding, flash flooding, storm tide inundation and overland flow flooding, which can impact your home and business.

The majority of our urban areas typically experience flash flooding or overland flow flooding, which occurs as a result of very heavy rainfall over a relatively short period of time.

The relatively narrow nature of our coastal floodplains (east of the Bruce Highway) means that widespread coastal flooding can occur relatively quickly after heavy sustained rain and usually recedes within 1 -2 days of eased or no rainfall. Very high tides can also cause flooding in coastal areas to the east and can worsen inland flooding by disrupting river and creek outflows. While rainfall and flooding can be widespread, the intensity and severity of an event varies across the City. It really does matter where it rains, the intensity of rain and how long it rains for. No two floods are ever the same and this makes it hard to plan for and predict future floods.

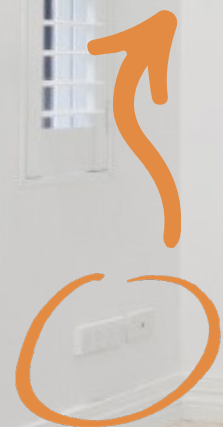
Moreton Bay City Council wants to ensure our communities are aware, prepared for and can take steps to improve their resilience to future storm and flood events that may exceed our past experiences. With climate change, we expect to see an increase in flood events over time, including more intense downpours and flash flooding in our City.

Council implements a range of actions to respond to flood risk including emergency management, land use planning, flood warning, community awareness and education, nature-based responses, structural mitigation and smart building design. All of these measures work together to improve our City’s response to flood risk.



INSIDE YOUR BUILDING

USE FLOOD SMART STRATEGIES ON THE INSIDE OF YOUR HOME OR BUILDING TO ADAPT TO FLOODING, SO THAT YOU SPEND LESS TIME CLEANING UP, HAVE LESS LONG TERM DAMAGE AND LESS LONG TERM COSTS.



Raise electrical outlets

Replace plasterboard with flood-resilient options like fibre-cement

Replace carpet with easy to clean surfaces

RAISE

1

ELECTRICAL OUTLETS

- Raise all of your electrical and data points above your building's flood planning level. This will avoid having to replace these in future flood events. Talk to a licenced electrician.

2

APPLIANCES

- Raise your washing machine, dryer and shelves above your building's flood planning level.



REPLACE

3

PLASTERBOARD

- Replace your plasterboard with flood-resilient fibre-cement and your wall framing with hardwood or metal, especially in the lower levels of your home or business.



4

WALL CAVITIES

- Try to avoid water getting into your wall cavities or design your home so that there are no cavities at all. If you have to keep the cavity, make sure the wall is moisture sealed on both sides well above your flood planning level. If you have pine stud walls, consider sealing them with a mould-resistant paint for further protection.

REPLACE

5

FLOORING

- Replace your carpet with flood-resilient flooring like tiles*, polished concrete or vinyl** so that it's easy to clean after a flood. Also replace your skirting with flood-resistant materials like tiles. Use flood-resilient sealant on tiles* to minimise the chance of mould and damage.

6

KITCHEN CABINETS

- Replace your kitchen cabinets with water-resistant materials like compact laminate cabinetry or stainless steel. Raise your cabinets up on legs or use removable kick-boards to make it easier to clean out underneath.



7

DOORS

- Replace your hollow doors with solid, aluminium or glass doors to reduce the chance that your door will swell and warp.

RETHINK

8

ENTRIES

- Rethink any small steps or level changes at or near your doors, especially any entry doors. You could install small ramps. It helps if door sills are the same level as the floor or “flush” with the floor. Having this space the same level means that it's easier to sweep out water without having small amounts remaining inside your house or business.



9

TWO STOREY HOMES

- Rethink your two-storey home so that the upper level has all the survival essentials such as food storage and water supply. Consider building a bench in the upper level for a future temporary kitchen.

Notes:

* Tiled flooring requires water-resistant adhesive and epoxy grout to be flood-resilient.

** Vinyl flooring (that does not have a foam underlay) requires flood-resilient substrate with a chemical set adhesive to be flood-resilient.



Removable cabinets under standalone benchtop

Polished concrete is a good flooring solution

ASK YOUR BUILDER TO:

10

REPLACE INSULATION

Replace your insulation with suitable closed-cell insulation and install resilient wall lining.

OUTSIDE YOUR BUILDING

USE FLOOD SMART STRATEGIES ON THE OUTSIDE OF YOUR HOME OR BUILDING TO HELP PREVENT WATER FROM ENTERING, OR MINIMISE DAMAGE.

Raise power boxes and other services

Make sure exterior doors are hardwood or solid core timber, or aluminium.

SMART IDEA

Do some research on your insurance company. Some insurers reward Flood Smart work through reduced premiums.

RAISE

1 YOUR BUILDING

- Raise your living areas (if possible) above the flood planning level; if your home is already on stumps, raise it further. Before building-in under your home or lower level, consider what property could be damaged in a flood.

2 SERVICES

- Raise your air-conditioning units, electrical meter board and hot water unit above the level that the flood waters reached. This will avoid having to replace these in future flood events. Talk to a licensed electrician or plumber.



Photo contribution JDA Co.

REPLACE

3 EXTERNAL MATERIALS

- Replace your external cladding and doors with water-resilient materials or consider replacing the walls with a non-cavity alternative.

4 METAL FIXTURES

- Replace your door handles with water-resistant products so that they don't corrode.

5 SOLID GARAGES

- Replace solid garages and carport walls with openings, gaps or air vents to allow water to flow through and to help the area to quickly dry out after a flood event.

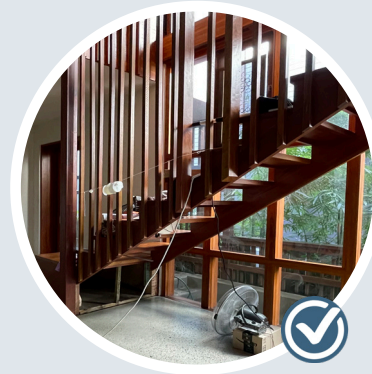


RETHINK

6

STAIRS

- Rethink your stairs that have voids/cavities with stairs that are open with no risers (or backs) so that water isn't trapped behind your stairs. This applies to your indoor stairs also.



7

STRUCTURAL FOOTINGS

- Rethink your structural post footings. Consider pouring a blinding concrete slab to minimise erosion and allow for easy wash out after a flood event. This is important to consider for sloping blocks where your structural posts may experience higher levels of scouring.



Photo contribution JDA Co.

ASK YOUR ELECTRICIAN TO:

8

RE-DESIGN ELECTRICAL CIRCUITS

Re-plan your electrical circuits so that the lower level is on a different circuit to your upper level. This will minimise disruption to your power supply during a flood event and after the power comes back on.

SMART IDEA

Take note and measure the level of where the flood water reached on your home or building.



YOUR YARD

USE FLOOD SMART STRATEGIES IN YOUR YARD TO HELP PREVENT WATER FROM ENTERING, OR MINIMISE DAMAGE.

Plants help stabilise the ground and soil

Add drains in low areas

SMART IDEA

Rainwater tanks are important for storing water and can be pre-emptively emptied prior to rain events so that it can store water from your roof and not overflow into your yard and driveway.



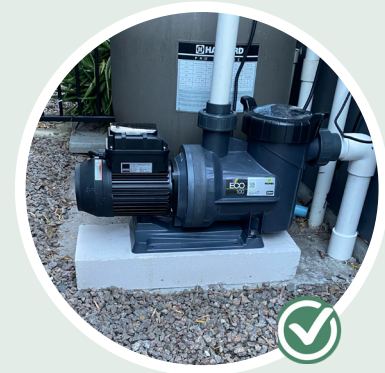
Porous ground cover

RAISE

1

PUMPS

- Raise your pool filter and pumps, and rainwater tank pumps above your building's flood planning level. This will avoid having to replace these in future flood events.



2

PRIVATE SEWERAGE

- Raise 'private sewerage treatment plans' like septic systems.

REPLACE

3

DRIVEWAYS

- Replace hard surfaces like concrete driveways with paving that 'absorbs' water (known as 'permeable paving' and 'porous surfaces').

4

HARD SURFACES

- Replace hard surfaces like concrete areas with grass, planting with mulch, gravel and stones to absorb water. However, avoid planting and adding gravel right next to your house, which can affect your footings and slab.

5

SOLID FENCING

- Replace your solid fencing to fencing with gaps and made from flood-resilient materials like hardwood timber, composite timber, PVC or metal, to help prevent waters building-up against a solid fence.



RETHINK

6

WATER FLOW

- Rethink your yard based on how water pools and flows during rain events and floods. Use swales, surface drains, spoon drains, channels and mounds to redirect water to the street or away from your home and your neighbour's home.



7

NEIGHBOURS

- Rethink the way that water flows on to your neighbour's property and redirect it to the street. Talk to your neighbours if you have any water flow issues. Note that Council cannot intervene in discussions or decisions between neighbours on overland flow issues.

8

GROUND MATERIALS

- Rethink your yard to minimise soil and silt run-off, especially on sloped land, by planting native groundcover species that stabilise the soil. Soil and silt can clog drains and contribute to increased flood levels.

9

YARD LAYOUT

- Rethink the locations of sheds, structures and rainwater tanks if they cause issues with the way water moves on your block. Consider how changes in your yard affect your neighbours and could cause more flooding in their property.

10

SEWERAGE SYSTEMS

- Rethink your sewer and install backflow devices if you have a septic system. Also, if you are on a septic system, during a severe storm or flood, make sure you put sand bags in your toilet to stop water flowing into the septic system and sewer water coming into your house.



11

ASK YOUR STRUCTURAL ENGINEER TO:

Look at your retaining walls to check that water doesn't build up inside them. They may need drainage elements to relieve future water pressure.

12

ASK YOUR LANDSCAPE ARCHITECT/DESIGNER TO:

Slow down the water on your block with rain gardens. Rain gardens are areas planted with water-loving plants that help slow, filter and collect flood water.

WANT MORE TIPS?

CHECK OUT:

1

MORETON BAY CITY COUNCIL FLOOD RESOURCES:

- Find out more about flood management and preparedness www.moretonbay.qld.gov.au/Services/Disaster-Management
- Find out more about flooding in the City of Moreton Bay www.mbrc.qld.gov.au/flooding
- To be notified of severe weather warnings sign up to MoretonAlert www.mbrc.qld.gov.au/moretonalert
- For the latest information during a disaster www.mbrc.qld.gov.au/disaster-portal



2

QUEENSLAND GOVERNMENT FLOOD RESILIENT BUILDING GUIDANCE FOR QUEENSLAND HOMES

Visit the Queensland Government Queensland Reconstruction Authority website for information about improving the flood resilience of new and existing Queensland homes. It includes guidance on flood resilient design principles, strategies, construction details, materials and the expected benefits and costs of flood resilient design.

Visit www.qra.qld.gov.au/resilient-homes/flood-resilient-building-guidance-queensland-homes



3

QUEENSLAND BUILDING AND CONSTRUCTION COMMISSION

- For handy hints of practical steps to take to rebuild after a flood and a register of licenced tradies visit www.qbcc.qld.gov.au/repair-rebuild-after-flood-storm-damage
- For information about permit requirements. View the 'Permit requirements for rebuilding and repairing after a natural disaster' (PDF)



4

NATIONAL CONSTRUCTION CODE (NCC)

Visit the Australian Building Codes Board website for the Flood Standard and the Flood Handbook. These cover the design and construction of new buildings in flood hazard areas.

Visit www.abcb.gov.au/resource/standard/construction-buildings-



YOUR HOME AND LIVING GUIDELINES

Other guidelines in the series available to download on the Moreton Bay City Council website.

Visit mbrc.link/your-home-and-living

1

RESHAPING OUR REGION'S PLANNING – YOUR CLIMATE SMART LIVING GUIDELINE

Reshaping Our Region's Planning - Your Climate Smart Living Guideline is Council's guide to our local climate containing detailed information about designing for comfort, shade, style, materials and more.



2

RESHAPING OUR REGION'S PLANNING – YOUR NEXT GENERATION HOME GUIDELINE

Reshaping Our Region's Planning - Your Next Generation Home is Council's guide to building an affordable home on a block sized under 600m².

For more information please contact Council

Visit	moretonbay.qld.gov.au
Email	council@moretonbay.qld.gov.au
Call	3205 0555
Write to	City of Moreton Bay PO Box 159 Caboolture QLD 4510

Thank you to our contributor JDA Co.



Moreton Bay City Council 2024

Every effort is made to ensure that the information contained in this guide is correct at the time of printing.

