

## INTRODUCTION

Floods are a part of life in Queensland, and as individuals and a community we are great at preparing for, responding to and recovering from natural disasters. However, climate change is likely to impact both the severity and frequency of flooding, including storm tides and flash floods, so making Queensland homes more resilient is essential for our future.

Flood resilient homes feature key design attributes that minimise damage and reduce clean-up effort and time.

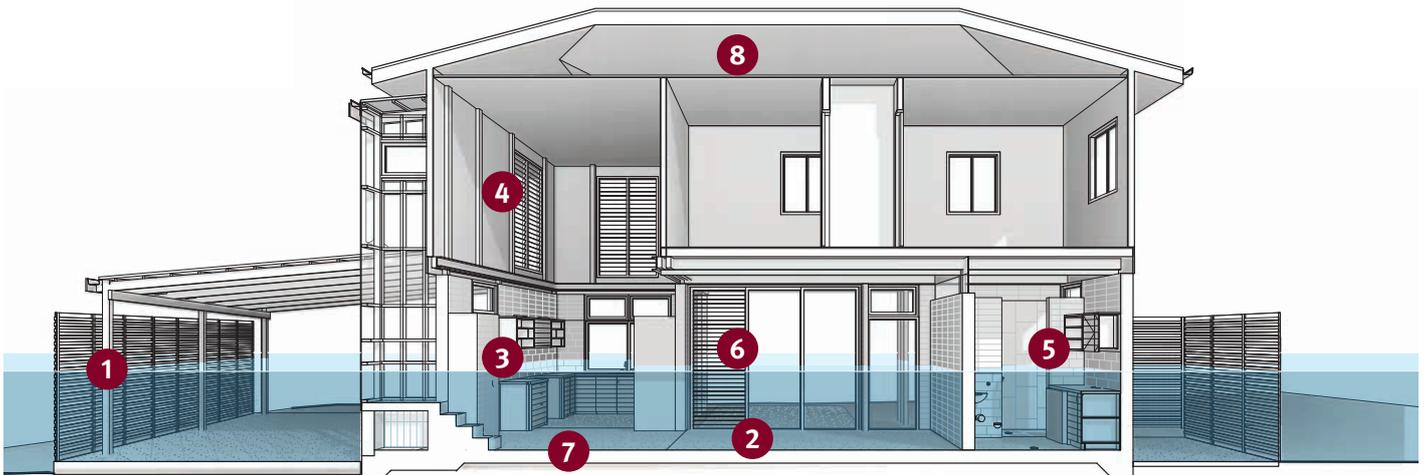
**Q: Can you think of any features in traditional Queenslander home design that might better protect homes from floods?** *Hint: built on stilts with louvres to let water flow through and reduce damage.*

Create your own flood resilient home design or model using the key attributes listed below. Get inspired by flood resilient designs from Queensland and across the world.

**Material ideas:** modify the supplied house template; LEGO®, Minecraft®, blocks, pop/craft sticks, 3D printing, cardboard models, recycled/found objects.

CLASS LEVEL: Upper Primary

CURRICULUM ALIGNMENT:  
HPE Personal, social and community health strand, focus areas: Safety and Mental health & Well-being. Technology Learning, focus area: design thinking.



- 1 Permeable fences & screening:** Fences and screens that allow water and some debris to pass through are important in preventing flood water build up. They are also much less likely to be damaged by the force of the water.
- 2 Polished concrete stairs and floor:** Polished concrete stairs and floors are highly durable and allow for easy post-flood cleaning. Polished concrete absorbs almost no water, dries quickly, and is very resilient. Tiled floors also reduce clean up and recovery efforts. Also, make sure your stairs are wide enough to move furniture upstairs away from rising floodwaters.
- 3 Marine-ply cabinetry with stainless steel frame:** In addition to using flood resilient materials such as marine ply for cabinetry, cabinetry can be designed within a stainless steel frame, allowing it to be removed from the frame and placed on higher ground in preparation of a flood.
- 4 Internal void:** Internal voids allow for large belongings to be raised up in preparation of a flood.
- 5 High powerpoints:** Locate power and data points above flood level.
- 6 Install louvres:** installing louvres in the walls of the lower level of your home to enable water to easily flow through the home during a flood and reduce damage.
- 7 Sealed stone floor & wall tiles:** Sealed stone tiles are impervious to water, and make for easy cleaning after a flood. Tiling the walls above the flood level allows for easy cleaning after an event.
- 8 Ceiling storage:** Locate key utilities in the ceiling such the air conditioning unit, hot water cylinder and battery store for the solar array. Placing these systems here means they won't be affected by a flood and can be easily inspected for damage.

## FLOOD RESILIENT DESIGN IDEAS FROM AROUND THE WORLD



### **Hind House, 2008 by John Pardey Architects, United Kingdom**

See [www.johnpardeyarchitects.com](http://www.johnpardeyarchitects.com)

This design raises the home on a steel frame above flood level. It allows flood water to flow freely underneath the building and excess water isn't pushed elsewhere.



### **Beach House, 2016 by RAAD Studio, United States**

See <https://raadstudio.com/project/beachhouse/>

This property is sandwiched between two waterways, so the challenge for the designers was to ‘balance an embrace of outdoor natural beauty while seeking to accommodate the site’s vulnerability to storms’.

The design solution was to raise the house well above the historic flood level but also to perch the design on hydrodynamic dunes with penetrations that allow water to travel through the landscape. Maritime construction techniques were used in the build.

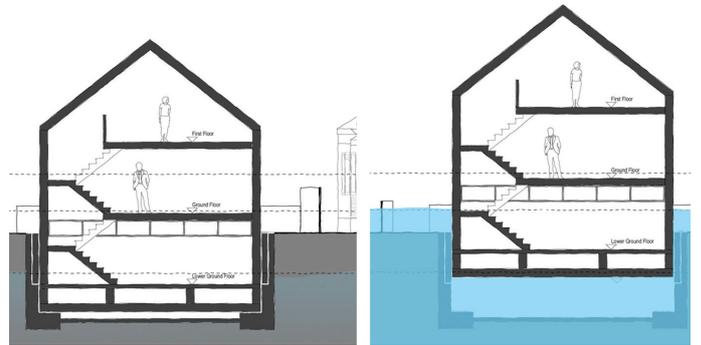
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### **Chelmer Flood House, by JDA, Queensland Australia**

See <https://jdaco.com.au/projects/chelmer-flood-house>

This traditional Queenslander home in Brisbane has a long flood history. Award-winning Queensland architects JDA renovated the home using the flood resilient design principles they had developed in collaboration with the Queensland Reconstruction Authority.



### **Amphibious House, 2015 by Baca Architects**

See [www.baca.uk.com](http://www.baca.uk.com)

The award-winning Amphibious House rests on the ground when conditions are dry, but rises up in its dock and floats during a flood, thanks to its floating base.

## FURTHER RESOURCES

### **Resilient Building Resources:**

One House to Save Many: To help create more resilient communities, Suncorp partnered with industry leading experts to design, build and test a home resilient to fire, flood, storm and cyclone. Visit [onehouse.suncorp.com.au/#explore](http://onehouse.suncorp.com.au/#explore)

### **Get Ready Queensland:**

For building and renovation tips visit [www.getready.qld.gov.au/get-prepared/protect-your-home-and-contents/building-and-renovation-tips](http://www.getready.qld.gov.au/get-prepared/protect-your-home-and-contents/building-and-renovation-tips)

For more information on flooding in Queensland, visit the Office of the Queensland Chief Scientist at [www.chiefscientist.qld.gov.au/publications/understanding-floods](http://www.chiefscientist.qld.gov.au/publications/understanding-floods)