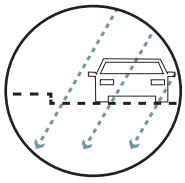
Flood-resilience strategies

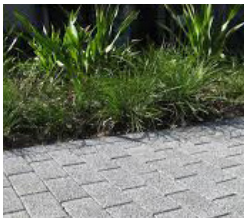
CODE	DESCRIPTION	DIAGRAM	IMAGE

A - THE YARD

A1.1 **Reduce surface areas which don't allow water to soak into the ground.**

- Don't use impervious pavement materials.
- Reduce length/width of driveways and other paved areas.





A1.2 **Create a bioswale and/or rain garden system.**

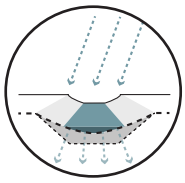
Bioswale

Bioswales are a simple landscaping and garden feature used to slow, collect and filter overland flow, allowing for the redirection of flood water away from the house.
NOTE: Prior to implementing this strategy consult Brisbane City Council for approvals.

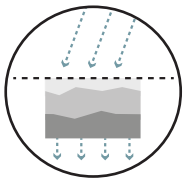
Rain garden

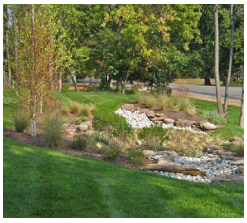
Rain gardens similarly collect water and are vegetated with water plants.
NOTE: Prior to implementing this strategy consult Brisbane City Council for approvals.

Bioswale



Rain garden

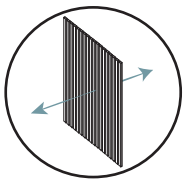


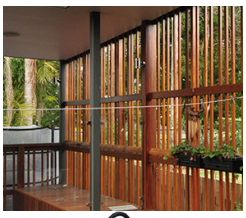


A1.3 **Relocate any yard-based structures that are in the path of overland flow.**

A1.4 **Create fencing which allows overland flow flood waters through.**

Flood damage to fences can be avoided by ensuring the fence is water permeable and made of a resilient material.

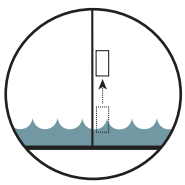




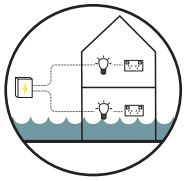
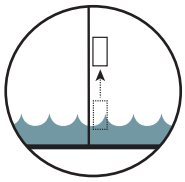
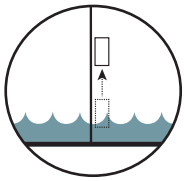
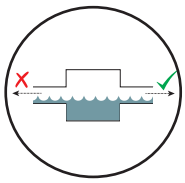
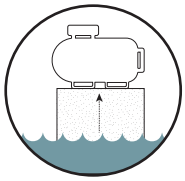
A1.5 **Install a submersible pump and sump.**

B - EXTERNAL SERVICES

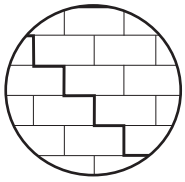
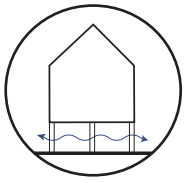
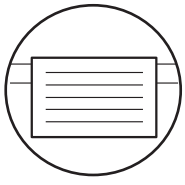
B1.1 **Raise the electrical meter board above the 50% Annual Exceedance Probability (AEP) flood level.**



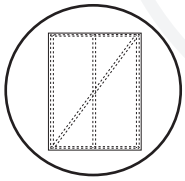
B - EXTERNAL SERVICES

CODE	DESCRIPTION	DIAGRAM	IMAGE
B1.2	**Install separate circuits (with breakers) on ground level and upper levels.**		
B1.3	**Raise the air conditioning condenser above the 50% AEP flood level.**		
B1.4	**Raise the hot water unit above the 50% AEP flood level onto a concrete plinth.**		
B1.5	**Install non-return valves on the existing sewer lines to stop backflow through plumbing fixtures.** NOTE: Queensland Urban Utilities (QUU) will be installing non-return valves as part of the Flood Resilient Homes Program.		
B1.6	**Elevate the pool's pump and electrical power systems above the 50% AEP flood level.**		

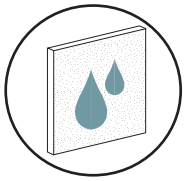
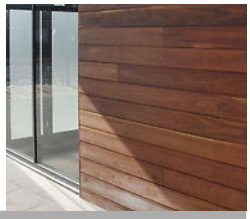
C - EXTERNAL STRUCTURE

C1.1	**Consult a RPEQ Structural Engineer for recommendations if there is any visible subsidence or cracking of the substructure.**		
C1.2	**Provide adequate drainage and ventilation to sub-floor area.** NOTE: Consult a RPEQ Structural Engineer for recommendations.		
C1.3	**Add additional air vents to above the 50% AEP flood level.**		

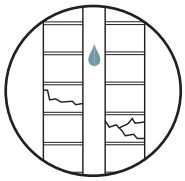
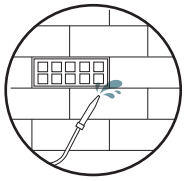
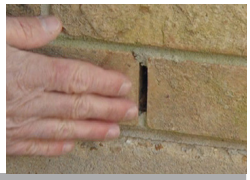
C - EXTERNAL STRUCTURE

CODE	DESCRIPTION	DIAGRAM	IMAGE
C1.4	**Replace any damaged structural bracing.** NOTE: Consult a RPEQ Structural Engineer for recommendations.		
C1.5	**Consult a RPEQ Structural Engineer for recommendations if there is any visible evidence that the structural posts or columns in the path of overland flow flooding are either rusted or unstable due to consistent contact with water.**		

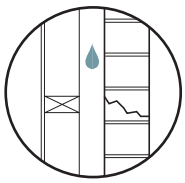
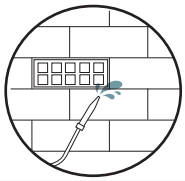
D - EXTERIOR

D1.1	**Replace external cladding with suitable water-resistant cladding.**		

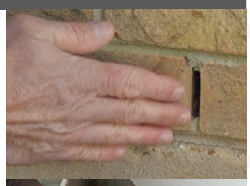
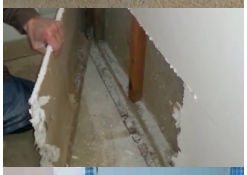
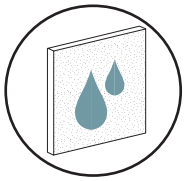
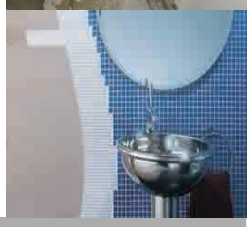
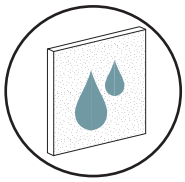
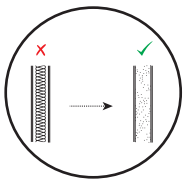
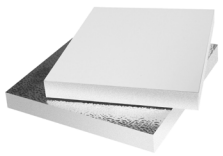
D2 - DOUBLE BRICK

D2.1	**Consult a RPEQ Structural Engineer for recommendations if there is any obvious damage to the cavity brick from flood waters.**		
D2.2	**Clean out any blocked weep holes and consult a RPEQ Structural Engineer for recommendations.**		
D2.3	**Add more weep holes for water to escape.** NOTE: Consult a RPEQ Structural Engineer for recommendations.		

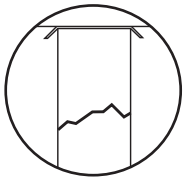
D3 - BRICK VENEER

D3.1	**Consult a RPEQ Structural Engineer for recommendations if there is any obvious damage to the brickwork from flood waters.**		
D3.2	**Clean out any blocked weep holes and consult a RPEQ Structural Engineer for recommendations.**		

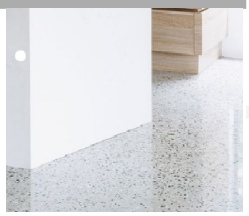
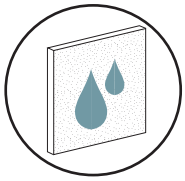
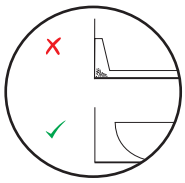
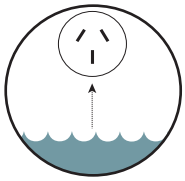
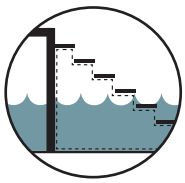
D - EXTERIOR

CODE	DESCRIPTION	DIAGRAM	IMAGE
D3.3	**Add more weep holes for water to escape:** NOTE: Consult a RPEQ Structural Engineer for recommendations.		
D3.4	**Remove water-damaged sections of internal plasterboard linings.**		
D3.5	**Remove non water-resistant linings and replace with a water-resistant product.**		
D4 - CAVITY WALL FRAMING			
D4.1	**Replace non water-resistant framing with suitable water-resistant framing.**		
D5 - INSULATION			
D5.1	**Remove wool insulation batts and replace with suitable closed-cell insulation.**		

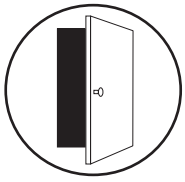
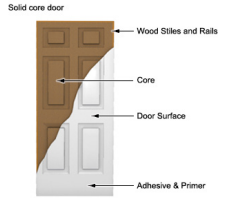
E - INTERIOR

E1 - INTERNAL STRUCTURAL MEMBERS			
E1.1	**Consult a RPEQ Structural Engineer for recommendations if there is any evidence of damage to structural members caused by flooding.**		
E1.2	**Consult a RPEQ Structural Engineer for recommendations if structural members should be replaced as part of a retrofit program.** **NOTE: Structural members are supports that are essential to the integrity of any stucture.**		

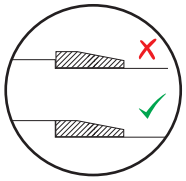
E - INTERIOR

CODE	DESCRIPTION	DIAGRAM	IMAGE
E2 - INTERNAL FLOORS			
E2.1	**Remove existing flooring and replace with water-resistant/proof flooring.**		
E3 - INTERNAL WALLS			
E3.1	**Remove existing wall linings and replace with water-resistant/proof linings to above the 50% AEP flood level.**		
E3.2	**Waterproof the junction between the wall lining and floor substrate.**		
E4 - WET AREAS - BATHROOMS			
E4.1	**Remove baths with low-height cavity walls and replace with a:** • free-standing bath that can be cleaned underneath • shower.		
E5 - INTERNAL SERVICES - ELECTRICAL			
E5.1	**Elevate powerpoints and datapoints above the 50% AEP flood level.**		
E6 - INTERNAL STAIRS			
E6.1	**Eliminate any cavities under or within the structure of the stairs.**		

F - DOORS, WINDOWS AND BUILDING OPENINGS

F1.1	**Replace hollow core doors with:** • solid core doors • aluminium and glass doors.		

F - DOORS, WINDOWS AND BUILDING OPENINGS

CODE	DESCRIPTION	DIAGRAM	IMAGE
F1.2	**Remove stepped door thresholds and replace with door thresholds flush to adjoining internal finished floor levels.** NOTE: Consult a RPEQ Structural Engineer for recommendations.		
F1.3	**Seal all frames to building fabric.**