

PLANS AND DOCUMENTS
referred to in the PDA APPROVAL

30 NOV 2015

MEDQ

20 July 2015
Ref. No. 12191W

Economic Development Queensland
Email: wendy.brewster@dilgp.qld.gov.au

ATTENTION: WENDY BREWSTER

Dear Wendy,

**Re: SERVICING ENGINEERING REPORT
265 MACARTHUR AVENUE, HAMILTON, LOT 14 SP195300**

We provide the following Servicing Engineering Report for the above development, in response to the Economic Development Queensland Information Request dated 09 July 2015.

DEVELOPMENT PROPOSAL

The proposed development application is for a Material Change of Use – for temporary activities within the site. The temporary activities are to include use of the existing hardstand and building for an Outdoor Sales or Hire Yard and Warehouse / Goods storage.

It is noted that no civil works are proposed as a result of this proposal. The site will be used for temporary activities in its current partially developed state.

SITE CHARACTERISTICS

The 5.024Ha site is located between Macarthur Avenue North and South, and is also bound by the future Angora Road (Lot 9 SP195300) on the eastern property boundary. Private property adjoins the site on the western property boundary. Refer to the locality plan below.



Figure 1: Orientation Plan (Retrieved from Google Maps 20/07/2015)

DIRECTORS
Tony Avis
Ross Kynaston
Nick Rozis
Brett Taylor

ASSOCIATES
Andrew Bryant
Robert Gray
Paul Kelly
Michael Kumala
Eric Ness Wilson
Kris Rensch
David Teakle

The existing site is partially developed with an asphalt pavement storage area and warehouse / office building. This consists of approximately 60% of the site. The existing development is accessed from a driveway to Macarthur Avenue South, adjacent the western property boundary. Current uses of the site include car storage, which is similar to the proposed temporary uses.

The remainder of the site consists of grassed areas to the north, and asphalt pavement areas to the west as a remnant of previous development.

TOPOGRAPHY AND SITE DRAINAGE

The site is relatively flat and has levels ranging between RL3.5 – 4.5m AHD. The existing asphalt parking / storage area and building is serviced by a private stormwater drainage system consisting of a number of field inlets within the pavement area. The undeveloped areas to the north of the existing asphalt pavement grade east towards the corner of Macarthur Avenue North and Angora Road. Stormwater is then collected via a series of field inlets and directed north, beneath Macarthur Avenue to an outlet into the Mangrove Channel.

Major flows from the site are expected to discharge east to Macarthur Avenue North / Angora Road or south west to Macarthur Avenue South.

FLOODING

A BCC Floodwise Property report has been obtained for the site. The BCC Defined Flood Level for the site is RL2.5m AHD as a result of Storm Tide from the Brisbane River. Existing site levels range between RL3.5 – 4.5m AHD, therefore sufficient flood immunity exists.

The BCC Floodwise report is attached in Appendix A.

EXISTING & PROPOSED STORMWATER INFRASTRUCTURE

There is existing stormwater within the site and within the fronting road reserves. This is summarised as follows and indicated on drawing SKC001 attached:

- There are existing field inlets within the site, providing drainage to the asphalt parking area. These connect to a private drainage system which is believed to discharge south to Macarthur Avenue and ultimately to the Brisbane River.
- There are a number of field inlets within the site, close to the northern property boundary. These collect stormwater from the northern part of the site and drain north beneath Macarthur Avenue, ultimately discharging to the existing Mangrove Channel. This drainage system was designed for fully developed flows and was constructed as part of the original Macarthur Avenue roadworks.

Based on a review of existing infrastructure, and consideration of the proposed temporary site uses the existing infrastructure is of sufficient capacity. Further investigations need to be undertaken should any extensions to the hardstand occur, with provisions for new drainage being reviewed at this time.

Any increases to impervious area and resultant increases in runoff from the northern undeveloped area of the site are acceptable, given that the existing drainage has been designed for a fully developed catchment. Further to this, as the site is located within the lower 1/3 of the greater catchment area and within close proximity to the Brisbane River, stormwater detention will not be required as per BCC City Plan 2014.

EXISTING & PROPOSED SEWERAGE INFRASTRUCTURE

There is existing sewer infrastructure within the fronting road reserves. This is summarised as follows and indicated on drawing SKC001 attached:

- There is an existing 150mm diameter CUR sewer within Macarthur Avenue, on the southern side of the site. This drains west until connection to the existing Northshore Hamilton Trunk Sewer constructed in 2011.
- There is an existing 324mm diameter HOBAS sewer within Macarthur Avenue on the northern side of the site. This sewer also drains west until connection to the existing Northshore Hamilton Trunk Sewer. This sewer was recently completed (Refer DEV2014/550) however is yet to receive formal On Maintenance from QUU.
- Further to the above a new sewer connection to the site will be constructed under the Angora Road works. This will connect to the existing infrastructure within Macarthur Avenue north as described above. This is expected to be completed by the end of 2015. Refer DEV2014/612.

It is noted that the existing Northshore Hamilton Trunk Sewer and sewer within Macarthur Avenue North are sized for future development of the area. Further to this the prior industrial developments serviced by the Macarthur Avenue South sewer have since ceased, alleviating capacity within this infrastructure.

It is considered that the proposed temporary site uses will produce negligible sewer flows. Based on this there is sufficient sewer capacity within the existing infrastructure to service the temporary uses of the site. The existing sewer connection from Macarthur Avenue south will be retained as the primary connection. Should an additional connection be required, permission from QUU will be sought to utilise the future Angora Road infrastructure.

EXISTING WATER

There is existing water infrastructure in the fronting road reserves. This is summarised as follows and indicated on drawing SKC001 attached:

- There is an existing 150mm diameter uPVC water main within Macarthur Avenue, on the southern side of the site. There is a 100mm diameter property service from this main, providing connection to the site.
- There is an existing 150mm diameter water main within Macarthur Avenue on the northern side of the site.

Given the size of the existing infrastructure and surrounding land uses, there is sufficient capacity within the existing infrastructure to service the temporary uses of the site. The existing 100mm diameter connection from infrastructure within Macarthur Avenue South will be retained as the primary site connection. Should an additional water connection be required for the temporary land uses, permission from QUU will be sought.

WATER QUALITY

Given that the site is already in a partially developed state, and that the proposed Material Change of Use is for Temporary Uses only (and in line with its current use), it is not deemed feasible to assess the site against the Healthy Waterways Pollutant Reduction targets. It is however proposed to provide Best Management Practices within the site to improve existing conditions.

In terms of pollutant discharges from the site, it is expected that continuing and changing use of the site will result in impacts to the Gross Pollutant discharge rates. Given the sites partially developed state it is not anticipated that the discharge rates of total Nitrogen, Phosphorus and Suspended Solids will be impacted. It is therefore proposed that Gross Pollutants are targeted to improve water quality discharges from the site.

To reduce the Gross Pollutant discharge from the site, it is proposed to implement the following Stormwater Quality Improvement Devices:

- The field inlets within the existing carpark area will be fitted with litter baskets (Ecosol RSF100 or equivalent). These act as a gross pollutant trap at each inlet.
- The existing field inlets to the north will also be fitted with litter baskets (Ecosol RSF100 or equivalent). These act as a gross pollutant trap at each inlet.

Although the site has not been assessed again Healthy Waterways Guidelines, it is deemed that the above solutions are satisfactory given the site uses. The location of the proposed treatment devices is indicated on drawing SKC001 attached.

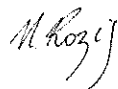
SUMMARY

This desktop serviceability report has demonstrated that the existing infrastructure surrounding the site is suitable for the proposed temporary site uses. Stormwater, sewer and water connections with sufficient capacity exist and can be utilised for the development. A Water Quality Solution consisting of Best Management Practices, relevant to the site uses has also been proposed.

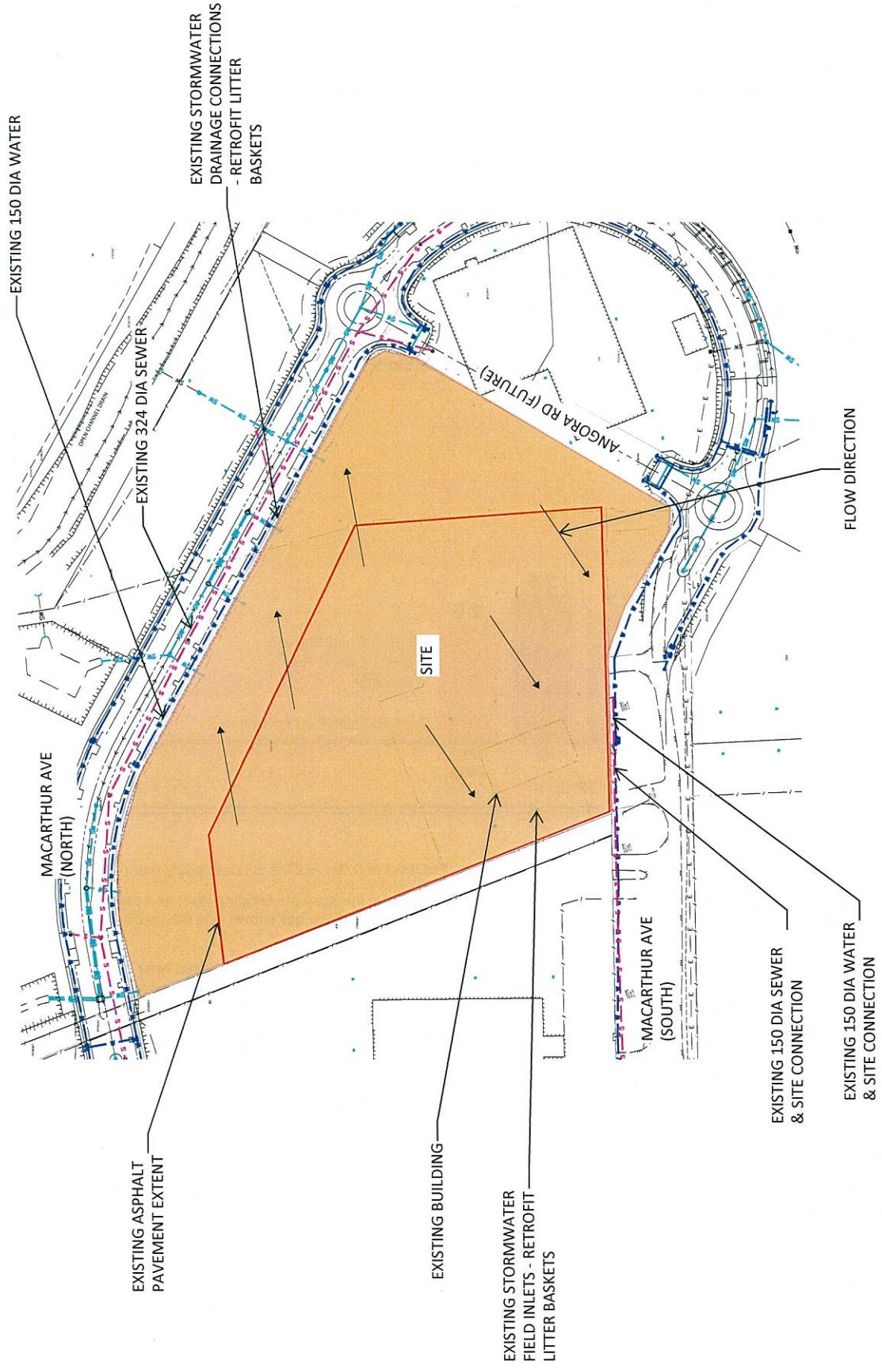
We trust that this information is sufficient to address the Economic Development Queensland Information Request dated 09 July 2015.

If you have any queries please contact the undersigned.

Yours faithfully,
BORNHORST & WARD PTY LTD



Per: NICHOLAS ROZIS
DIRECTOR



BORNHORST + WARD CONSULTING ENGINEERS CIVIL AND STRUCTURAL Level 4, 67 Astor Terrace, Spring Hill, QLD 4000 P. +61 (7) 3013 4699 mail@bornhorstward.com.au		REV	DATE	DESCRIPTION	DWN	DTS	CHK	APP	PROJECT	SUBJECT	PROJECT No.	DRAWING No.	REVISION
A	20/07	FOR INFORMATION							265 MACARTHUR AVENUE TEMPORARY USE MCU	EXISTING SERVICES PLAN	12191W	SKC001	A
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Brisbane City Council FloodWise Property Report

Report Reference

3413230

20/07/2015 11:44:56

Dedicated to a better Brisbane

THIS REPORT IS FOR BUILDING AND DEVELOPMENT PURPOSES ONLY

The FloodWise Property Report provides property or lot-based flood information for building and development requirements. This report provides information on estimated flood levels, habitable floor level requirements and more technical information on the four sources of flooding: river, creek / waterway, storm tide and overland flow. Refer to the Useful Definitions section for a glossary of terms.

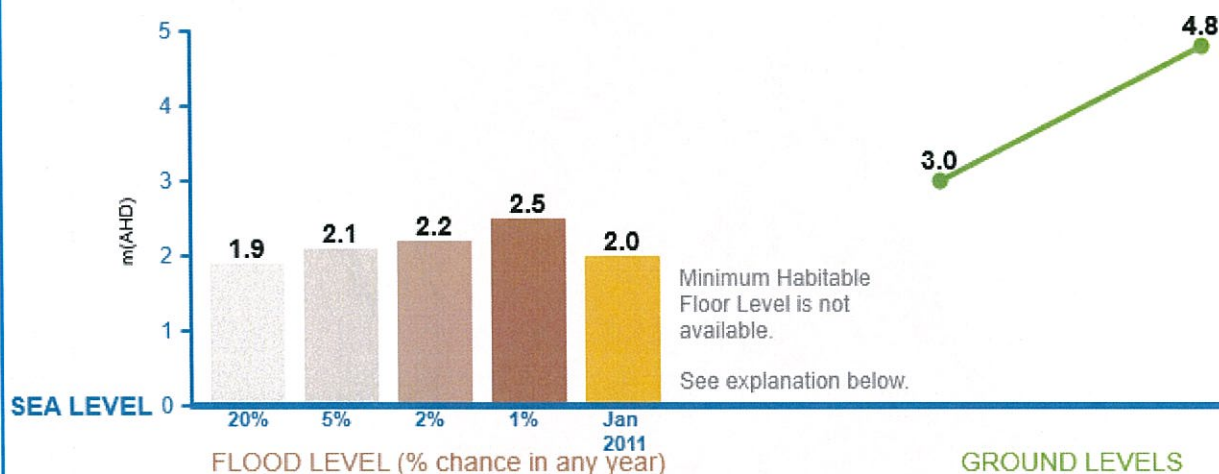
To find out more about how the contents of this report may affect building or development on this property, please visit www.brisbane.qld.gov.au/planning-building. For more general information about understanding your flood risk and how to prepare your property, family or business for potential flooding visit www.brisbane.qld.gov.au/beprepared

PROPERTY DETAILS:

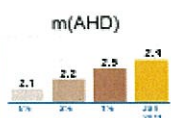
Address: 280 MACARTHUR AVE, HAMILTON QLD 4007

Lot Details: L.14 SP.195300

FLOOD LEVEL INFORMATION



EXPLANATION



m(AHD) - Metres Australia Height Datum. The level of 0.0m AHD is approximately mean sea level.

Flood Levels - The Flood level bar chart above shows the possible flooding level and percentage chance of that level being reached or exceeded in any year. If an orange bar shows, it is the calculated January 2011 flood level at this address or lot.

Minimum Habitable Floor Level - Applies to residential development only. Please refer to Council's planning scheme to learn how this may affect you. If a property is in an overland flow path, or a large allotment, a minimum habitable floor level cannot be provided. Refer flood and planning development flags below.

Ground Levels - The green line above shows this property's approximate lowest and highest ground levels based on latest available information (2009 airborne laser survey) to Council. If you are building, please confirm with a surveyor.

For further information and definitions please refer to the Useful Definitions page

FLOOD AND PLANNING DEVELOPMENT FLAGS

DEVELOPMENT
FLAG(S)

This property is affected by one or more flood or property development overlay or flags. These are:
OVERLAND FLOW PATH, LARGE ALLOTMENT

Please review the technical summary over page for more detail.



Brisbane City Council FloodWise Property Report

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TECHNICAL SUMMARY

This section of the FloodWise Property Report contains more detailed flood information for this property so surveyors, builders, certifiers, architects and engineers can plan and build in accordance with Council's planning scheme. For more information about building and development in Brisbane please visit www.brisbane.qld.gov.au/planning-building or talk to a Development Assessment Planning Information Officer via Council's Contact Centre on (07) 3403 8888.

PROPERTY DETAILS:

Address: 280 MACARTHUR AVE, HAMILTON QLD 4007

Lot Details: L.14 SP.195300

PROPERTY INFORMATION (Summary)

The following table provides a summary of flood information for this property. More detailed flood level information is provided in the following sections of this report.

PROPERTY SUMMARY	LEVEL (mAHD)
Minimum Ground Level	3.0
Maximum Ground Level	4.8
Min Habitable Floor Level	Contact Council
Defined Flood Level (DFL)	2.5
Defined Flood Level Source	STORM TIDE
Flooding may also occur from	RIVER,OVERLAND FLOW

ESTIMATED PEAK FLOODING LEVELS

The table below displays the peak estimated flood levels by probability for this property. Estimated flood level data should be used in conjunction with applicable planning scheme requirements - Refer to Flood Planning Development Information.

Note that the overland flow flooding level maybe higher than the levels below from other sources.

DESCRIPTION	LEVEL (mAHD)	SOURCE
20% AEP	1.9	STORM TIDE
5% AEP	2.1	STORM TIDE
2% AEP	2.2	STORM TIDE
1% AEP	2.5	STORM TIDE
January 2011	2.0	RIVER
DFL	2.5	STORM TIDE

FLOOD PLANNING DEVELOPMENT INFORMATION

This section of the FloodWise Property Report contains information about Council's planning scheme overlays. Overlays identify areas within the planning scheme that reflect distinct themes that may include constrained land and/or areas sensitive to the effects of development.

FLOOD OVERLAY CODE

The Flood overlay code of Council's planning scheme uses the following information to provide guidelines when developing properties. The table below summarises the Flood Planning Areas (FPAs) that apply to this property. Development guidelines for the FPAs are explained in Council's planning scheme, which is available from www.brisbane.qld.gov.au/planning-building.

FLOOD PLANNING AREAS (FPA)		
RIVER	CREEK/WATERWAY	OVERLAND FLOW
FPA5		Applicable

COASTAL HAZARD OVERLAY CODE

There are currently no Coastal Hazard Overlays that apply to this property.

PROPERTY DEVELOPMENT FLAGS

Overland Flow Path - Mapping indicates this property is in an overland flow path. Overland flow flooding usually occurs when the capacity of the underground piped drainage system is exceeded and/or when the overland flow path is blocked. It is recommended you consult a Registered Professional Engineer of Queensland to determine this property's habitable floor level and flooding depth.

Large Allotment - This property is a Large Allotment of over 1000 square metres. Flood levels may vary significantly across allotments of this size. Further investigations may be warranted in determining the variation in flood levels and the minimum habitable floor level across the site. For more information or advice, it is recommended you engage a Registered Professional Engineer of Queensland.



Brisbane City Council FloodWise Property Report

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Useful Definitions

Australian Height Datum (AHD) - The reference level for defining ground levels in Australia. The level of 0.0m AHD is approximately mean sea level.

Annual Exceedance Probability (AEP) - The probability of a flood event of a given size occurring in any one year, usually expressed as a percentage annual chance.

Defined Flood Level (DFL) - The DFL for Brisbane River flooding is a level of 3.7m AHD at the Brisbane City Gauge based on a flow of 6,800 m³/s.

Maximum and Minimum Ground Level - Highest and lowest ground levels on the property based on available ground level information. A Registered Surveyor can confirm exact ground levels.

Minimum Habitable Floor Level - The minimum level in metres AHD at which habitable areas of development (generally including bedrooms, living rooms, kitchen, study, family and rumpus rooms) must be constructed.

Council's Planning Scheme - The City Plan (planning scheme) has been prepared in accordance with the Sustainable Planning Act as a framework for managing development in a way that advances the purpose of the Act. In seeking to achieve this purpose, the planning scheme sets out the Council's intention for future development in the planning scheme area, over the next 20 years.

Residential Flood Level (RFL) - Residential flood level (RFL) for Brisbane River flooding equates to the flood level applicable to the extent of January 2011 floods as depicted by mapping on the Queensland Reconstruction Authority website or the Council's defined flood level (DFL) for the Brisbane River, whichever is higher.

Brisbane City Council's Online Flood Tools

Council provides a number of online flood tools:

- to guide planning and development
- to help residents and businesses understand their flood risk and prepare for flooding.

Planning and Development Online Flood Tools

Council's online flood tools for planning and development purposes include:

- FloodWise Property Report
- Flood Overlay Code

For more information on Council's planning scheme and online flood tools for planning and development:

- phone 07 3403 8888 to talk to a Development Assessment Customer Liaison Officer
- visit www.brisbane.qld.gov.au/planning-building
- visit a Regional Business Centre.

Helping residents and businesses be prepared for flooding

Council has a range of free tools and information to help residents and businesses understand potential flood risks and how to be prepared. This includes:

- Flood Awareness Maps
- Flooding in Brisbane - A Guide for Residents
- Flooding in Brisbane - A Guide for Business
- Early Warning Alert Service. Visit www.brisbane.qld.gov.au/earlywarning to register for email, home phone or SMS severe weather alert updates.

Note: The Flood Awareness Maps show four levels of flood risk from high risk (flooding is very likely to occur) through to very low risk (very rare and extreme flood events). Flooding in the low and very low risk areas has no planning and development requirements and is therefore not reflected in the FloodWise Property Report.

For more information on Council's online flood tools for residents and business:

- Visit www.brisbane.qld.gov.au/beprepared
- Phone (07) 3403 8888.



Brisbane City Council FloodWise Property Report

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3413230

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Disclaimer

1. Defined Flood Levels and Residential Flood Levels, and the Minimum Habitable Floor Levels are determined from the best available information to Council at the date of issue. These flood levels, for a particular property, may change if more detailed information becomes available or changes are made in the method of calculating flood levels.
2. Council makes no warranty or representation regarding the accuracy or completeness of a FloodWise Property report. Council disclaims any responsibility or liability in relation to the use or reliance by any person on a FloodWise Property Report.



Planning to build or renovate?

For information, guidelines, tools and resources to help you track, plan or apply for your development visit www.brisbane.qld.gov.au/planning-building

You can also find the Brisbane City Plan 2014 and Neighbourhood Plans as well as other information and training videos to help with your building and development plans.