Council’s Duty of Care with regard to Stormwater

The New South Wales Government has vested with Council the role of Floodplain Manager to manage the flow of stormwater over land within its Local Government Area from local catchments, and from riverine flows.

The routes of Council’s and Sydney Water’s drainage systems generally coincide with the natural watercourse of stormwater from the contributing catchments. In certain rare storm events overland flow may be an issue for properties with such land features, or adjacent to such land features.

The Government has nominated the surface water level from storm events up to 100 years, plus an appropriate freeboard, as the basis for determining finished floor levels for the majority of developments.

Overland Flow Studies

Overland Flow Studies will generally be required to accompany Development Applications on sites that:

- Share a boundary with the Georges River/Salt Pan Creek foreshores and Wolli Creek, or any tributary of the above waterways;
- Contain, adjoin or are positioned adjacent to a Council or Sydney Water pipeline or canal; and
- Are located in the low point of a road or gully.

Occasionally there may be development where due to location or other factors a study may not be deemed necessary, just as there may be other sites more remote from watercourses for which a study will be required. (eg developments proposing underground basement areas)

Applicants should make an enquiry to Council’s Development Engineer to clarify Council’s requirements for the need for an Overland Flood Study.

General Flood Study Criteria to be considered by Hydraulic Engineer and submitted with Development Application

- Over-land flows for storms up to 100 year ARI;
- A comparison between the overland flow paths of stormwater for the existing state of the development site and that after the proposed development;
- Demonstration that the new development will not be at risk of inundation;
- Demonstration that the development will not increase flood risks to owners and occupants of neighbouring properties, properties downstream and the general public;
- Analysis to account for blockages of the overland flow paths and of the pit and pipe system – usually a 50% pipe or channel blockage allowance is to be provided unless stipulated by Council’s Development Engineer;
- Assessment of hazard levels of overland flow, i.e. from the velocity (v) x depth (D) product at relevant cross-sections through the development site; and
- Hazard levels should conform to the guidelines in Appendix L of the NSW Floodplain Development Manual (NSW Government, 2005). Detailed justification will be required where variations to accepted risk levels are proposed.
Developments on Sites near the Georges River or Salt Pan Creek

Sites adjoining these waterways may be flood affected in a major storm event on land at levels below 2.5m AHD in the Georges River and Salt Pan Creek. Council’s adopted freeboard of 500mm to floor levels must be maintained above the local flood level determined by the applicant’s hydrological/hydraulic engineer.

Further information on appropriate flood levels is provided in Appendix K of the NSW Floodplain Development Manual (NSW Government, 2005).

Developments at Locations Identified by Council as Potentially Flood-Affected

Council can provide information on the flood affectation of a property but only where studies have been carried out. Information may not be available for all locations.

Where Council considers that an inundation risk may exist, an overland flow analysis by a professional engineer experienced in flood estimation must be submitted with any development application.

Council’s freeboard limits above the 100 year ARI flood level are:

- Habitable rooms in residential and commercial developments adjacent to ponding or slowly-moving water (less than 1m/sec), including OSD surface storages - 300mm.
- Habitable rooms in residential and commercial developments adjacent to fast-moving water (Greater than 1m/sec) - 500mm.
- Garages: zero freeboard, i.e. floor levels can be set at the 100 year ARI flood level, but not lower.
- Factories: generally zero freeboard to 100 year ARI flood level, but larger freeboards may apply for certain uses where there is high damage-potential.
- Protection shall be provided against storm flows entering properties from the street gutter or adjacent 100 ARI overland flow paths. Especially in the case of low level driveways, a crest level at 100mm above the 100 year ARI overland flow level in the driveway is required. For all developments proposing underground basement areas and car parks, protection of at least 100mm freeboard shall be provided against inundation during a 100 year ARI storm. Care must also be taken to prevent flooding of basement areas through ventilation and other openings.
- For properties directly affected by overland flows and the formation of ponds of stormwater, the developer must undertake an assessment of risk and take measures to avoid excessive depths of water in trapped low points. For areas around developments in paths, gardens, open car parks or garages a maximum allowable water depth of 200mm shall be permitted. Where an area is fenced to prevent access by children, ponding depths of up to 1200mm shall be accepted.
- For developments catering to persons more vulnerable to danger than normal, such as hospitals, aged persons homes and child-care centres, the effects of floods from storms up to Probable Maximum Precipitation level shall be considered, with special emphasis on emergency responses such as evacuation.

As a minimum all studies shall meet the requirements of the New South Wales Floodplain Development Manual 2005 and Australian Rainfall and Runoff 1987.