City of Ryde

Acid Sulfate Soil

Acid sulfate soil is the name given to naturally occurring sediment and soil containing iron sulphides. The exposure to the sulphides in these soils to oxygen by drainage or excavation leads to the generation of sulphuric acid. This happens when the soil beneath the water table is disturbed by exposure to air.

The City of Ryde has been advised by the New South Wales Government that certain properties within the City may be subjected to Acid Sulfate soil. The majority of land in Ryde is included as class 5 land. This class of land is not mapped as having a probability of containing acid sulfate but rather because activities carried out on the land may have the potential to alter groundwater in adjacent Class 1 to 4 land.

In general the use of Class 5 land for normal residential occupation will not be affected by the possibility of acid sulfate soil.

Any works proposed to be undertaken in Class 5 land which may lead to the lowering of the water table below one metre Australian Height Datum in adjoining Class 1, 2, 3 or 4 land would require the matter to be addressed in an application to Council. In general it would require a major activity such as sinking a bore to reduce the water table in adjoining or nearby land.

Should you have any enquiries please contact the City's Customer Service Centre on 9952 8222.

City of Ryde

Slope Instability Risk Zones

Low Risk Zone

It is considered that development of areas designated at Low Risk is unlikely to be affected by slope failure problems due to natural features. Specific geotechnical investigations of these areas is not considered necessary unless development involves major slope modifications.

Moderate Risk Zone

Areas designated as Moderate Risk (i.e. areas M1 and M2) exhibit sufficiently steep slopes and residual/slopewash cover overlying shale, that some concern exists on the possibility of slope instability, particularly in the case of uncontrolled development.

Zone M1

It is recommended that in areas designated M1, where slope angles generally exceed 10°, and where there is some evidence to indicate concern on the possibility of slope instability, proposed development should be subject to geotechnical assessment by a suitably qualified Geotechnical Engineer or Engineering Geologist. This should involve an initial inspection of surface features, with subsurface investigations required where conditions are confirmed to be adverse.

Zone M2

In areas designated M2, where slope angles are generally in the range of 5° to 10°, it is recommended that Council officers initially assess whether individual building applications warrant geotechnical assessment. In these areas it is generally recommended that the height of uncontrolled fill and excavations be restricted to a maximum of one (1) metre, unless supported by an engineered retaining structure. In addition, structures in these areas should be founded on weathered shale, below any residual/slopewash materials.

Zone M3a

The development of areas designated as Moderate Risk (M3a) located near steep slopes, cliff lines and boulders in sandstone terrain, should ensure that structures are founded on in-situ sandstone, not potentially unstable detached blocks of sandstone. Where development is proposed adjacent to a steep escarpment it is recommended that the proposed development be initially assessed by Council Officers who would decide whether or not a geotechnical assessment is required. In addition to reduce the likelihood of rockfalls, the removal and/or stabilisation of potentially unstable rock blocks should be undertaken.

High Risk Zone

In the areas designated High Risk, where features indicate active, recent or potential slope instability, development should be regarded with concern. It is recommended that any proposed development within these areas, should be subject to a geotechnical investigation of surface features supported by subsurface investigation to define the geotechnical parameters which are required to more accurately define the degree of risk associated with such development.