

# INSURANCE RISK ASSESSMENT

Systems Engineering Australia Pty Ltd (SEA) is able to offer a comprehensive risk assessment service to the insurance and re-insurance industry which draws upon a 20 year experience in the effects of natural hazards on the built environment.

We have the necessary engineering and scientific expertise and analysis tools to address the complex areas of numerical modelling, statistical modelling, data analysis as well as building standards and strength.

## Tropical Cyclone Winds

Our analytical model of tropical cyclone wind fields represents the state of the art in risk analysis and has been extensively calibrated and applied throughout Australia and also overseas.

## Storm Surge

SEA storm surge modelling and statistical analysis has set the technical standard in Australia for over 10 years, forming the basis of local planning guidelines for surge inundation along most of the



Queensland coast, Darwin, North-Western Australia and northern NSW.

## Wave Modelling

SEA has particular expertise in the specialised field of numerical spectral wave modelling which augments our storm surge analyses for considering wave damage potential to buildings.

## Flooding

SEA has also extend these sophisticated risk methodologies to include wide and local area flood and flash flood analyses.

## Thunderstorms

Models are also available which can address hail, lightning and severe wind damage aspects of thunderstorms throughout Australia, based on the latest state of knowledge.

## GIS Hazard Mapping

Our PML analyses incorporate sophisticated use of satellite and digital elevation data to accurately map suburban areas in fine detail. Terrain and topographic influences derived in this way merge directly into our wind, wave and surge models to provide very detailed infrastructure damage estimates.

**Specific services include:**

- ◆ PML analyses
- ◆ Design criteria review
- ◆ Regional wind speeds
- ◆ Storm surge
- ◆ Wave and current
- ◆ Thunderstorm wind and hail
- ◆ Technical review

**Some of our insurance clients are:**

- ◆ Suncorp Metway Insurance
- ◆ Sun Alliance and Royal Insurance
- ◆ FAI Insurance
- ◆ Commercial Union Insurance
- ◆ RACQ GIO
- ◆ The RPI



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