Start preparing Sydney, warming is inevitable

KELSEY MUNRO  SMH February 23, 2010

- Cities like Sydney should take pragmatic measures to prepare for an inevitable degree of warming, for example by planning to lift port infrastructure as sea levels rise, building new water supply systems and devising plans to minimise heatwave-related deaths, said Michael Oppenheimer, a geoscientist at Princeton University and a lead author of the third and fourth assessment reports of the Intergovernmental Panel on Climate Change.
FEATURES OF CLIMATE CHANGE

CLIMATE CHANGE
- DROUGHT
- SEA CHANGE
- DISASTERS
- SUSTAINABILITY
- RIGHTS TRADING
- ADVOCACY
- CARBON SEQUESTRATION

SURVEYORS ARE INVOVLVED – WHERE’S WALLY??

CADASTRAL SURVEYOR
- LOCATION
- MEASUREMENT
- PROPERTY BOUNDARIES
- PROPERTY RIGHTS
- OTHER RIGHTS ?
DROUGHT

- RIVER BOUNDARIES
- WATER INFRASTRUCTURE
- COMMUNITY TITLE
- DISASTERS

DRY RIVER BED

CASTLEREAGH RIVER - COONAMBLE

SHRINKING RIVER BOUNDARIES

Google image
RIVER BOUNDARIES
NSW SURVEYOR GENERAL’S DIRECTIONS

- “bank” means the limit of the bed of a lake or river.
- “bed” means the whole of the soil of a lake or river including that portion -
  - (a) which is alternately covered and left bare with an increase or diminution in the supply of water; and
  - (b) which is adequate to contain the lake or river at its average or mean stage without reference to extraordinary freshets in time of flood or to extreme drought;
- “river” includes any stream of water, whether perennial or intermittent, flowing in a natural channel, and any affluent, confluent, branch or other stream into or from which the river flows.
Merryville Estate Water Allocations
Merryville Estate Community Association

- Residents in the Estate receive an allocation of water via a metered tap for use in their garden or for stock. The water is sourced from either the dam or the bore located off Merryville Drive opposite the dam and is pumped to the two header tanks located in the community land off Thoroughbred Drive and reticulated to residents by gravity feed.

- The dam has a maximum capacity of 55.8 mega litres and the bore allocation is 19 mega litres per annum; the bore allocation is based on a harvestable right of ground water and, consequently, if the allocation from the bore is exceeded the entitlement for the following year is reduced accordingly. The amount of water in the dam varies depending on climatic conditions - rainfall and evaporation rate. The Community Association sets the annual allocation to each lot based on an estimate of the amount of water that will be available in each particular year.

DISASTERS

- FIRE
- LAND SLIP
- FLOODS
- TSUNAMIS
FIRE

SURVEYING AFTER VICTORIAN BUSHFIRES
LANDSLIP AND SURVEYOR

- DETERMINING MOVEMENT OF BOUNDARIES.
- DEFINING BOUNDARY LOCATION
- PROVIDING EVIDENCE OF LAND MOVEMENT.

LANDSLIP

S.F. DAILY JOURNAL – JAN 19, 2005

- “There Goes the Neighborhood -- Slowly Shifting Land in The East Bay Hills Causes Legal Disputes Between Neighbors Over Who Owns What”

- By Robert Selna, Daily Journal Staff Writer
TSUNAMIS
Dr Craig Roberts School of Surveying and Spatial Information Systems - UNSW

• “But imagine the situation faced by surveyors in Indonesia in the aftermath of the Boxing Day Tsunami. The Tsunami wiped out whole villages and took with it all the survey marks, all evidence of existing land boundaries, many of the land records in the local Lands Department buildings and tragically many of the occupants of the land were also killed. Some land was permanently submerged under the ocean and some new land just emerged. Where would the local surveyors possibly start to re-establish people’s rights and ownership over their land?”

FLOOR AND SITE LEVELS

• COUNCIL PLANNING AMENDMENTS
• HIGHER FLOOR LEVELS
• SITE LEVELS EXTENDING BEYOND BOUNDARIES
• HIGH WATER MARK?

SEA CHANGE

• SEA LEVELS
• COASTAL PROTECTION
• BUILDING LEVELS
• PROPERTY BOUNDARIES

FLOOR LEVELS
GOLD COAST CITY COUNCIL
TIDAL BOUNDARY
NSW – SURVEYOR GENERAL’S DIRECTIONS

• Except under special conditions, as prescribed by law, a boundary cannot extend below mean high water mark. Where the bank or MHWM has eroded suddenly and the processes causing the change did not satisfy the doctrine (i.e. natural, gradual and imperceptible erosion), then the former position of the natural feature boundary will not change. In these cases the natural feature boundary may extend into the water. ?????

• Titles to the beds of all tidal waters, unless specifically vested in another authority or the subject of a Crown Grant, are under common law deemed to be vested in the Crown

COURT CASES

• ENVIRONMENT PROTECTION AUTHORITY v. ERIC SAUNDERS [1994] NSWLEC 187 (29 November 1994) TITLE TO ERODED LAND BATEMANS BAY

• NORTHCAPE PROPERTIES PTY LTD v. DISTRICT COUNCIL OF YORK PENINSULA (2007) “DEVELOPMENT SHOULD BE SET-BACK A SUFFICIENT DISTANCE FROM THE COAST TO PROVIDE AN EROSION BUFFER WHICH WILL ALLOW FOR AT LEAST 100 YEARS OF COASTAL RETREAT”
BOAT HOMES – HOLLAND
By Gizmodo US Edition on February 9, 2008

SUSTAINABILITY
- EASEMENTS AND/OR RESTRICTIONS
- DUE DILIGENCE
- FLOOR AREAS
- MEDIUM DENSITY ESTATES
- HIGHER DENSITIES
- OTHER

GALVESTON ON STILTS
Galveston and Texas History Center, Rosenberg Library

OPEN SPACE EASEMENT
“STORY POLES”

WIND FARMS
CARBONSIMPLICITY

CARBON SEQUESTRATION EASEMENTS?
(Energy Tribune 18/03/2008 / FutureGen)

SOLAR FARMS
ENVIRALMENT
"THE ACT GOVERNMENT IS PLANNING FOR CLIMATE CHANGE"  
ACT GOVERNMENT 2010 STATEMENT OF PLANNING INTENT

The Government’s intent is to: ….
- develop and implement statutory arrangements for protecting solar rights
- … to ensure better tools for measuring the energy gain and strengthening the rules around passive solar orientation of stand alone blocks in new subdivisions
- … further enhance stormwater harvesting in new estates

DUE DILLIGENCE??
National Real Estate Investor - Denise Kalette

- “To date, real estate due diligence has focused on revealing risks associated with purchasing, selling or converting property assets. But the expanding view of environmental due diligence now includes the potentially beneficial effects of tax credits and the use of carbon credits, as well as savings in the financing process and possible higher valuations for energy-conserving structures, among other issues.”

DUE DILIGENCE REPORT
RICS

OTHER RIGHTS

- CARBON RIGHTS
- WATER RIGHTS
- ECO RIGHTS
- SOLAR RIGHTS
- RIGHTS TRADING
- RIGHTS ASSOCIATED WITH CADASTRE
CARBON TITLE AND JURISDICTION
Boydell, Shaehan, Prior & Hendy

CARBON ACCOUNTING
• NGER (National Greenhouse and Energy Reporting Act 2007)
• CPRS (Carbon Pollution Reduction Scheme)
• EEO (Energy Efficiency Opportunities Program)
• Greenhouse Challenge Plus
• State Government programs

ISSUES RELATING TO CARBON MEASUREMENT
• JURISDICTION: COMMONWEALTH OR STATE
• LAND OWNERSHIP VS RIGHT TO USE STORAGE SITE
• NATIVE TITLE AND CULTURAL HERITAGE SITES
• ENVIRONMENTAL AND PLANNING LAWS
• WATER ISSUES
• TAX CONSIDERATIONS
• THIRD PARTY ACCESS – TRADE PRACTICES ACT
• ACCOUNTING REQUIRING MEASUREMENT
• THE NATIONAL GREENHOUSE AND ENERGY REPORTING ACT

CANBERRA ARBORETUM
ACCOUNTING REQUIRING MEASUREMENT

- Tree Sizes
- Areas
- Floor Areas
- Structure sizes
- Accuracy
- Surveyors or others?

FLOOR AREA ISSUES

- DEFINITIONS
- INTERPRETATION
- PURPOSES
- MINIMISE OR MAXIMISE
- MEASUREMENT
- EXCLUSIONS AND INCLUSIONS

FLOOR AREAS CANBERRA
WATER RIGHTS - FARM DAMS

Greenhouse Development Rights
ECOEQUITY

- The Greenhouse Development Rights framework is designed to support an emergency climate stabilization program while, at the same time, preserving the right of all people to reach a dignified level of sustainable human development free of the privations of poverty.

ECO RIGHTS?
The Ecological Rights Foundation

- The Ecological Rights Foundation is devoted to furthering the rights of all people to a clean, healthful, and biologically diverse environment. It is essential that industries afford protection to workers, consumers, communities, and our ecosystems, the foundations of our local economies. Through education and the enforcement of environmental laws, we seek to protect the public and our environment from injurious business practices.

BIO RIGHTS
www.bio-rights.org

- Bio-rights is an innovative financing mechanism which provides micro-credits for sustainable development to poor communities in return for their active involvement in the protection of the natural environment.

Successful community involvement leads to conversion of micro-credits into definite payments, enabling sustainable development and environmental conservation to go hand in hand.
ADVOCACY

• NEW IDEAS
• INVOLVEMENT
• CONSEQUENCES
BACTERIAL TRANSFORMATION OF CO2 - JAPAN

ALTERNATIVE IDEAS

FIG Congress 2010
Facing the Challenges – Building the Capacity
Sydney, Australia, 11-16 April 2010
3-D CITY FARMS

SKY FARM

SSSI SUBMISSION – SUSTAINABLE CANBERRA
FRANK BLANCHFIELD
I don’t want emissions to stay in the air,
To fill our lungs and to spread everywhere,
To cause global warming, submerging the land!
To stop all this mess we should lend our hand!