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THE PROBLEMS FOR GOVERNMENT
ASSOCIATED WITH
GEOLOGICAL HAZARDS IN THE URBAN AREA.

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INTRODUCTION

Landforms where Natural Geological Events occur fast enough to affect mankind, are generally termed areas of 'Geological Hazard'.

In Australia the main geological hazards which affect us are:

- * landslides, earthflows and rockfalls
- * coastal erosion and accretion
- * earthquakes.

The problems these hazards pose for Government are therefore, anticipating where these geological events may occur, the nature of the resultant disaster, and provision of assistance for people confronted with the disaster. Prior to discussing these problems however, it is proposed to examine the way in which a disaster affects individuals, and to then proceed to look at the problems themselves.

GEOLOGICAL HAZARD AND THE INDIVIDUAL

The magnitude of a disaster caused by a natural geological event depends largely upon the perspective from which it is viewed. To the individual, a disaster can be a big rock rolling down a hillside, into an individuals house and possibly hurting one of his children. To a local community a disaster can be an earth tremor which breaks the local dam, and floods the town. To the nation however, a disaster would be the destruction of a city (e.g. Darwin), or the flooding of a very large occupied area.

A geological disaster affects the individual by:

- * destroying (partly or completely) his house, place of work, and possibly his life.
- * partial and/or total financial loss.
- * severe emotional distress.

Whilst many of the consequences of a disaster are the result of man's folly (e.g. building a house on an active landslide), in most cases people are entirely unaware of the risk to which they expose themselves. An example of how the various people involved in the construction of a house can become legally entangled, is set out in the following diagram.

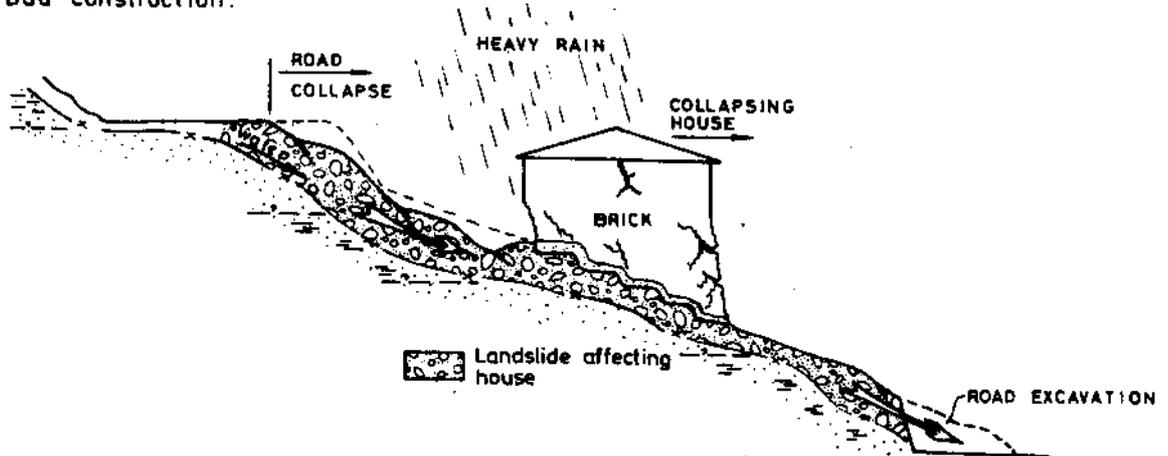
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DEVELOPER ?

- Subdivided known unstable land.
- Filled creeks.
- Bad construction.

OWNER ?

- Ignorant of problems.
- Built wrong type of house.



BUILDER ?

- Ignorant of problems.
- Did not take professional advice.

COUNCIL ?

- Excavated lower road.
- Approved subdivision and house plans.
- Over-ruled residents objections to subdivision.

WHO PAYS ?

All the parties in such a case are to some extent responsible, but the problem of obtaining adequate financial redress for the individual enmeshed in such a situation remains.

AVENUES OF RELIEF.

When confronted by a particular 'Disaster' people attempt to restore their situation by:

- * petitioning 'The Government'^{a.} for aid
- * claiming upon insurance
- * instituting legal proceedings
- * going bankrupt.

Because most insurance policies exclude geological hazards

^{a.} the use of the Phrase 'The Government' here is intended to include any level of Government, or agency of Government. The Phrase is also intended to convey the concept of an over-ruling authority, with almost limitless resources.

such as landslip, and bankruptcy is widely regarded as unacceptable, redress is usually sought from 'The Government'. If petitions upon the Government fail, legal proceedings are often instituted against potentially guilty parties. Such claims usually revolve around a claim that somebody failed to take 'due-care', and is therefore negligent.

One of the big problems in the present situation is finding out exactly "who, or what is responsible" for a particular disaster, and then having the necessary financial capacity to take the appropriate legal action. Further, given that a legal action does succeed, then it is imperative that those found guilty should have the financial capacity to adequately restore the situation. All too often the disasters that affect the individual, are largely caused by a builder, developer, or professional group who are insolvent when a disaster occurs.

PRESENT GOVERNMENT INVOLVEMENT IN DISASTERS

In the prevention and treatment of 'Disasters', Government is mainly involved at the Local and State levels. The Federal Government generally only assists in a co-ordinating role, unless the disaster is a major one.

The State Government through the Department of Local Government and the Planning and Environment Commission, is primarily concerned with the provision of technical resources (e.g. planning, finance, etc.) to Local Councils, and is actively involved in the organisation of the State Emergency Service. The State Government also undertakes research into general building practice, and is actively involved in The Standards Association and various Learned Societies.

The Local Government is primarily concerned with:

- * town planning
- * establishing and maintaining building and development regulations
- * directing of individuals to sources of professional advice
- * assistance and advice in times of emergency
- * support and maintenance of the Local State Emergency Service.

Local Government is potentially therefore the most important arm of the Government in assisting in the prevention of disaster, and as a source of assistance during a disaster.

PROBLEMS FOR GOVERNMENT

As stated earlier, the problems geological hazards pose for Government are:

- * anticipating where a geological event may occur
- * the nature of the resultant disaster
- * provision of assistance for people confronted with the disaster.

To overcome any or all of these problems, a Government must first embark upon a form of land - use planning which inevitably leads to conflicts of interest. These conflicts in turn give rise to Social, Political, Legislative, Legal and Technical Resource problems. It is these problems that are discussed in the following paragraphs.

Social Problems

Social problems arise because everybody expects 'The Government' to help. They usually don't care who is responsible, or who pays for it; simply 'The Government' has got to help. In addition, people are generally unwilling at a time of disaster, to make a person bear the consequences of their own actions. In other words, no matter how silly a person has been in the past, 'The Government' must help them. Also, the drama of the event (often largely created by our radio, television and other media), tends to magnify the problem. Natural disasters are ideally suited for dramatic television presentation, and therefore often make a greater media impact than they warrant.

Further, should a Local Council use its 'zoning' powers to notify landowners of hazards on their land, then they are the first to object. Generally, landowners see such action as an unnecessary interference into their 'Right' to buy and sell land. The owners of the land affected by 'hazard zoning' will therefore probably take the Council to court, and so involve the Council in potentially costly legal proceedings. The Council must therefore be prepared to support its zoning requirements by adequate evidence, which is often difficult and costly to obtain. Councils are therefore reluctant to undertake 'hazard zoning', and so many people are creating their own disaster simply because of ignorance. However, a Council which does not warn its ratepayers of the potential hazards in a given area is likely to be found liable by a Court for failure to exercise its rights of care, control and management in its area of responsibility.

Political Problems

When land is zoned as 'exposed to a particular geological hazard', there is invariably considerable protest because of the associated reduction in the market price of the land. Owners of the affected lots consequently try to have the zoning changed, either by legal action or political pressure. As a result local politicians are reluctant to openly support 'hazard zoning' because it makes them unpopular with their electors.

Again, should an elector suffer financial loss or hardship as a result of a disaster, his elected representative will usually try to get him assistance. This assistance can consist of:

- * questions in the parliament and/or Council chamber
- * political pressures on Government departments to assist
- * indirect support via various charitable organisations.

However, because of the general inertia of our Governmental system, and the capacity of bureaucracy to "fob-off" well intentioned but slightly inaccurate questioning, the individual politician is usually only effective as "moral support". It seems that only when a very large disaster occurs, and hundreds of people are involved, that there is sufficient political pressure to really stimulate action.

Legislative and Legal Problems

The problems with the existing situation appear to be largely:

- * the nature of the various Local Government Acts currently in force
- * the cost of legal proceedings
- * the difficulty of accurately determining the precise cause of a particular disaster
- * the method of providing finance to restore the situation after the disaster.

In general terms, the tenor of the various parliamentary acts under which the local authorities act is negative. That is, the Acts (and their related ordinances) contain considerable detail about what a local authority can or cannot permit, when presented with a particular proposal; however the Acts generally

require such things as the exhibiting of maps before Councils can take a positive step to say:

"a person shall, or even should, do this"

otherwise such a statement, would be regarded as a breach of basic human rights. There is also a widely held view that a man should be entitled to do as he likes with his own land, even that this is a "Common Law" right.

Thus, if a person proposes a most unwise development (e.g. a brick house on a frontal sand dune), in an area where no Council 'hazard zoning' has been published, then in law the Council cannot refuse permission to build if:

- * the plans are prepared in the prescribed manner
- * the developer has a report or certificate, from a qualified professional person to say that it is satisfactory,

because the Council is required to indicate, in advance by zoning, that special requirements exist for particular blocks of land.

It appears that it does not matter what the Council may think of the situation, or the hazard to which the individual exposes himself; if the individual complies with the zoning and relevant regulations, then a Council cannot withhold approval. It is the author's view that the Local Community wants the Council to exercise a positive role in development; but of course the individual immediately affected by a zoning decision often feels that:

'The Council has NO RIGHT to interfere'

The difficulties encountered by an individual who seeks compensation through our legal system for loss or damage, seem to be the following:

- * the length of time it takes to bring an action against potentially guilty parties
- * disagreement between 'expert' witnesses about the cause of a particular disaster
- * rules of evidence in a court of law, as opposed to a court of inquiry
- * Government departments being 'immune' from action.

It is to be noted that disasters of any kind usually require urgent and prompt action to abate their impact; therefore a restitution system based upon lengthy legal proceedings inevitably prolongs suffering and hardship. Also, it seems most unfair that if an individual follows advice from a Government Department, which is subsequently proved to be erroneous, that he cannot legally put his case against that Department.

All of the foregoing combine to suggest that the present situation of 'plaintiff and defendant' legal proceedings combining:

- * determination of disaster cause
- * allocation of responsibility
- * determination of damages

is not the best way to treat a disaster occasioned by a geological hazard, and may in some circumstances, entirely rule out any action. It is however the only course of action presently available in a large number of cases.

It is the author's view that the technical causes of a particular disaster would be better explored and perhaps the socio-economic impact of disaster reduced, if there was a permanent statutory body (or court) which operated in a similar fashion to the Coroner's Court. This body (or Court) could perhaps be called a 'Hazard Investigation Board', and conduct inquiries into various disasters (small or large) prior to Common Law actions being instituted.

Technical Resource Problems

In Australia, because of our small population we have a general shortage of technical resources. Therefore we have a very limited capacity to cope with the problems relating to a natural disaster. Specifically, at present in Australia:

- * the topographic and geological mapping of the country is rather inadequate
- * there is a general shortage of suitably qualified technical people.

Consequently, technical personnel are often asked to act in spheres beyond their expertise, and perhaps make judgements based upon inadequate data. A reallocation of the nation's resources could speed up the mapping of the country, but there is a limit to how fast this can be done, whilst maintaining suitable accuracy.

POSSIBLE SOLUTIONS

Any solution to the foregoing problems will not be easy, and will certainly involve some extremely well considered legislation. In addition, various technical standards and building practice will need to be reconsidered and upgraded in some areas. Some of the ways in which the socio-economic impact of a Disaster could be reduced are described in the following paragraphs:

The Individual could:

- a) Carry out all development in strict accordance with local and state government regulations.
- b) Employ only properly qualified people.
- c) Acquaint himself and his local Council, with various hazards and problems in his area.

The Local Community (or Council) could:

- a) Ensure that it is fully aware of the potential for disaster in its area by:
 - * preparing a set of detailed 'Geological Hazard' risk maps
 - * developing 'plans of action' for potential disasters
 - * building up a 'community fund' for disaster relief in its area (e.g. from rate levies, building fees, etc.)
 - * conducting a series of public information lectures on the geological hazards that affect the area.
- b) Require that all professional and/or trades people working in its district are:
 - * properly, and appropriately qualified
 - * have appropriate insurance against negligent workmanship and/or advice
 - * fully aware of the geological hazards in the area (e.g. by the restricted publication of technical information, etc.).

The National Community (at State or Federal level) could:

- a) Provide such funds and/or technical resources as are necessary to:
- * rapidly complete nationwide topographic mapping at a large scale
 - * develop appropriate technical expertise in the definition of hazard areas, and arrange for the regional hazard mapping of the country.
- b) Enact such legislation as would provide for:
- * the definition of Local Government responsibility to:
 - take 'Due Care' in establishing and enforcing building and/or development standards
 - take positive action to reduce and/or alleviate geological hazards in its area.
 - * the establishment of an Insurance Scheme to enable those with a 'liability to compensate' to have sufficient financial capacity.
- c) Establish a permanent 'Hazard Investigation Board' that would operate in a similar manner to the Coroner's Inquest Courts, which would be charged with:
- * the investigation into the causes of a particular disaster, to determine whether the disaster was naturally caused or man-induced.
 - * making recommendations upon technical 'Codes of Practice' for hazard areas.

The Board would of course need special legislative backing, and be empowered to investigate and seek compensation from:

- * Government bodies.
- * Semi-government and statutory bodies.
- * Private individuals and/or corporations.

The Board should also encourage Public participation in its hearings, so that the community at large becomes more aware of the problems associated with geological hazards.

CONCLUSION

The problems associated with disasters arising from man occupying areas of geological hazard are essentially those of:

- * Trying to protect people against their own ignorance
- * Finding better ways in which communities or individuals, can re-establish themselves after a disaster
- * Modifying our currently accepted building and development practice so that the 'potential for disaster' of a given area is progressively reduced.

These are all difficult matters, with no easy solution. Clearly the maximum benefit will be achieved if each local community looks after the problems which it can at the local level, but local activity can really only be successful if it is properly supported by State and Federal Government agencies. The setting up of a national 'Hazard Investigation Board', and the publication of maps indicating 'Areas of Geological Hazard' would alleviate many of the problems which occur in areas of geological hazard.

It is also clear that major revision of the various local Government Acts is necessary if the Local Community is to be able to exercise its role effectively.

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