NEW ZEALAND RESIDENTIAL SUBDIVISION AND DEVELOPMENT CONTROLS IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

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'Much of our urban development to date has been ad hoc, very urban but not very planned. It has been largely driven by land speculators and developers and has propelled suburban housing ever outward. Urban Planning has traditionally ignored wider environmental issues and as a result has led to highly car-dependant and inefficient cities.'

Tricia Caswell (1995)

ABSTRACT

Recent decades have seen an increased realisation by humanity that the resources of the Earth are not inexhaustible. International conferences have discussed ways in which the resources of the Earth can be better managed, giving rise to the term "sustainable development".

Since 1991 New Zealand local authorities have been drafting new plans to achieve the 'sustainable management of resources' . However, with the population of New Zealand becoming increasingly urbanised, greater attention needs to paid as to whether the ways in which urban areas develop are sustainable. A benchmark needs to be established, against which New Zealand planning controls can be compared to find out how effective those controls are in encouraging sustainability, and pinpoint those areas where improvement is needed.

This research identifies those factors which are generally though to be important in achieving more sustainable forms of residential subdivision and development, and investigates whether indeed the new Plans which are being developed incorporate provisions which are consistent with those factors. A series of indicators were developed, aimed principally at checking new plan provisions for their consistency with those factors which were thought to assist in bringing about more sustainable forms of residential subdivision and development.

The reported research results found that experts in the field of sustainable development generally felt that sustainable residential subdivision and development avoided locating in areas of high ecological significance, hazards, or high soil value, promoted a more compact, energy-efficient urban form, made the most efficient use of infrastructure and minimised pollution, minimised the use of non-renewable resources, and helped reduce crime.

New Zealand planning controls were generally found to be slightly more sustainable than unsustainable when measured on a continuum. While this may be seen as positive, the fact remains that, there is still much room for improvement. Some of the reasons for the gap between New Zealand residential subdivision and development controls and the ideals of sustainable development undoubted lie with the current legislation which tends to separate social, economic and environmental objectives. The Resource Management Act (under which plans controlling subdivision and development are formulated) focuses, principally, on the environment only. Sustainable development on the hand, focuses on objectives associated with all three.

Other factors hindering the development of controls which promote more sustainable forms of residential subdivision and development, are the relatively lack of research into residential design aspects and indicators of sustainability which are appropriate to New Zealand conditions, and, the general lack of awareness and acceptance by the community of planning controls which could help improve sustainability.

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

GLOSSARY OF TERMS AND ABBREVIATIONS

Biodiversity: A truncation of 'Biological Diversity' which was defined in the 1992 Convention on Biological Diversity as 'the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexities of which they are part ; this includes diversity within species, between species and of ecosystems'.

Brownfields (development/sites) development on land previously used for urban or industrial development in built-up areas (Barton, Davis and Guise 1995).

Corridors : In landscape ecology are defined as narrow strips or land which differ from the matrix [surrounding landscape] on either side. Corridors may be isolated strips, but are usually attached to a patch of somewhat similar vegetation. (Foreman and Godron 1986).

Controlled Activity: An activity which is provided for as a "controlled activity" by a rule in a plan or proposed plan and which complies with standards and terms in that plan, and which is allowed only if a resource consent is first obtained from the relevant authority. Under the Resource

Management Act an application to undertake a controlled activity can not be declined, but the consent authority may impose conditions to minimise any adverse effects.

Ecological Deficit: The level of resource consumption and waste discharge by a defined economy or population in excess of locally/regionally sustainable natural production and assimilative capacity. In spatial terms it can be defined by the difference between that economy/population's ecological footprint and the geographic area it actually occupies (Rees, 1996).

Ecological Footprint: The corresponding area of productive land and aquatic ecosystems required to produce the resources used, and to assimilate the wastes produced, by a defined population at a specified material standard of living.

Greenfield (development/sites): Development on/of land which has not previously been built upon or used for urban uses (at least in recent history).

Greenhouse Effect: In the general atmosphere surrounding the Earth, the warming effect due to selective absorption by certain gases such as carbon dioxide, methane, nitrous oxide and other compounds; these greenhouse gases prove transparent to incoming short-wave radiation but relatively opaque to long-wave radiation reflected back from the

Earth, the result being a warming (or greenhouse) effect. The concentration of Carbon dioxide in the atmosphere since 1890 appears to have increased from around 288 parts per million to 345 parts per million. It is thought that if this trend continues, further climatic changes may occur which will be of benefit to some regions but detrimental to others. The sea level would rise due to the thermal expansion of the oceans. The Arctic and Antarctic polar ice caps may also eventually melt (Gilpin, 1990).

Mixed-Use (development): Development which involves more than one activity (residential, retail, office, medical, etc.) taking place in close proximity to each other. Uses can mix on adjacent lots of land, or on the same lot. Use may mix horizontally on the same or separate lots and/ or vertically in buildings.

Non - Complying Activity: an activity (other than one which is prohibited) which contravenes a rule in the plan and is allowed only if a resource consent is first obtained. Often Local Authorities will cover unforeseen circumstances by having a rule in their plan which classifies any activity that has not been listed in their plan as 'non-complying'. The burden of proof (for the purposes of obtaining consent) that is required to prove that adverse effects will not result from a particular proposal, is usually greater than for other activity classes (such as, controlled or discretionary).

Precautionary Principle: Principle 15 of the *Rio Declaration on the Environment and Development* stated that: 'Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation'. This is commonly referred to as 'the precautionary principle'.

Rent: The net surplus paid to any factor of production (labour, land, capital) above the amount that is necessary to keep it in its present occupation (Johnston, 1986). The concept is different from income in that it includes the concept of opportunity cost (the income foregone in not taking up an alternative choice or option).

State of the Environment Report (SER): A systematic analysis of environmental conditions and trends obtained through environmental monitoring.