

## THE ENVIRONMENT THING

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Environment, conservation and ecology are all "in words" at the moment and it looks as though they will continue to be in vogue during the remainder of the 70's. I am an idealist and firmly of the opinion that this environment thing is not just a passing fad but is here to stay. At this time we appear to be going through a transitional period and are experiencing the associated teething problems. We are all concerned about our physical environment and we all recognise that total planning holds the key to our future and to that of the environment. The term "environmental planning" has been coined to describe the technique that will right our existing and future land use and pollution problems.

What is this "environmental planning"? Who are these so-called environmental planners and how do they conceive an environmental plan? I would suggest that very few people know. The complexity of our environmental problems confounds some of us. Some others theorise, rationalise, or dramatise the situation and the remainder simply pay ear or lip service to environmental planning. I would also suggest that the term has commercial overtones. A residential development designed by an environmental planner has more appeal than one designed by a surveyor or a developer. The same type of development would probably have even more appeal if designed by an environmental architect rather than by an architect. As a result many professionals have renamed themselves or prefixed their titles with the word "environmental" and are simply doing the same thing under the guise of a new name.

A further criticism I have is that the so-called environmental planning movement of recent vintage often fails to fully take into account two fundamental resources—man and nature. The geometric planners have been preoccupied with developing a functional landscape and have concerned themselves with such things as population

densities, employment patterns and traffic density and volume. But what of the people who have to live, work and play in these unimaginative environments? People are what we are planning for after all; and what of the natural environment which is more often than not completely ignored and subjected to uses and activities in direct conflict with its natural processes and visual values?

Sociology and ecology both have much to contribute to the planning process. These broad disciplines should be understood in relation to each other, and the other planning disciplines, and not in isolation. Ecological data is practically worthless if it can't be used or is not in usable form. We must, therefore, communicate on a level of mutual understanding of and respect for each other's capabilities and limitations.

Ecology is fast becoming recognised as a land planning discipline and, as I see it, has a dual role to play. Firstly in design and, in particular, landscape design, and secondly in landscape planning. I will illustrate these two roles with examples of projects recently undertaken at Lincoln College.

### FRANZ JOSEF INFORMATION CENTRE

In August 1970 the Westland National Park Board invited the Landscape Design Section, Lincoln College, to prepare landscape proposals for the site of their new visitor information centre as a student project. The site, which encompasses several acres, is located on State Highway 6 just south of the township of Franz Josef on the site of the original Franz Josef Hotel. The information centre was designed by Hall and McKenzie, architects, of Christchurch.

The team, which was made up of six landscape design students and myself, produced a design which included details of traffic and pedestrian circulation, parking, etc. As the site was relatively

devoid of vegetation we felt that the planting proposals should not appear as an attempt to beautify but should strive to create an interesting and educational landscape. To accomplish this the assistance of Dr G. T. Daly and Mr D. W. Ives was solicited. The enlarged study team elected to establish a succession of plant communities and their associated soils that would occur naturally in a Westland glacial valley.

The soils and vegetation near Franz Josef Glacier have been studied by several people, but the most comprehensive work is that embodied in research on chronosequences by Dr Peter Stevens. He located, and established, probable ages of a series of fluvio-glacial deposits ranging through 14 stages over a period of 22,000 years. After studying Stevens' work we selected six stages which showed the major changes in soils and vegetation and planned these in a biorama surrounding the Information Centre. We did not set out to achieve natural replicas of each stage but to use suitable plants which would occur naturally in each stage. The design team felt that an illustrated brochure to explain the natural changes in the chronosequence would assist the visitor in enjoying this unique opportunity to observe in a few acres what occurs naturally in a Westland glacial valley. This project was accepted and approved by the Westland National Park Board early this year.

The Franz Josef project adequately illustrates how ecology formed the basis of a design proposal. The following studies illustrate a similar point, the essential difference being that environmental factors influenced the designs.

#### RICCARTON HIGH SCHOOL

Recently the landscape design students at Lincoln College undertook a landscape study for Riccarton High School, Christchurch. A considerable degree of difficulty had been experienced in the past in establishing trees along the road frontage of the school and this had been attributed to climatic influences, mainly wind exposure. However, we found that the factor limiting plant growth was soils and soil moisture. Both Kaiapoi and Waimakariri soils occur on the site and Kaia-

poi soils are more water retentive. This was seen in the persistence of yarrow and grass sward on the Kaiapoi silt loam during periods of drought.

The students were thus able to select ecologically suitable species for planting. I would like to stress, however, that ecologically suitable species do not necessarily solve a design problem—in this instance exotic deciduous species are the basic theme of the plantings along Riccarton Road and therefore an acceptable design solution would have been to continue this theme and irrigate the planted trees.

#### WAIMAIRI FORESHORE DEVELOPMENT

This study presented the idea of total concept planning as opposed to the haphazard use of the area. With regional recreation in mind the history of land use, development and the relationships between the site and its immediate surrounds with metropolitan Christchurch were studied. The site is over three miles in length and throughout showed evidence of overuse and, in some places, outright abuse. The most apparent problem was disturbance to plant growth which resulted in complete breaching of foredunes and in wind erosion and blowhole areas in the secondary dunes and back areas.

The senior landscape architecture students with the assistance of Dr G. T. Daly, selected and ran four transects through the site. Density of plant growth and frequency of occurrence of individual species were recorded from the beach back to the areas of stabilisation, namely pine forests. At the same time topography was surveyed and later mapped and the ecological data superimposed. From these profiles a correlation between age, stability and plant life of the dunes could be drawn and more important, understood.

The stability of the dunes depended on the anchoring vegetation which in turn was dependent on several factors such as the sea, weather, ground water and human use. The beach zone was found to be extremely tolerant to human use while the next zone, primary dunes, was found to be absolutely intolerant and disturbance would remove vital shelter of the areas behind. The area immediately behind the primary dunes was found

to be tolerant to limited recreation use provided that ground water on which the vegetation depended was not depleted. The inland or secondary dunes were also found to be vulnerable to development. However, the back of these dunes was found to be suited to more intensive use especially where trees had established. In the final analysis the site was found to require stabilisation wherever development had occurred. Two alternatives were thus available: firstly, areas of development could be planned as close to the sea as pine planting would be feasible; or secondly, soil could be brought in and thus stabilisation could be achieved by utilising the wider variety of plants which are associated with soils rather than sand. Where development was deemed necessary or desirable the design students were in a position to plan with complete regard for the ecological implications. This was evident in the overall conceptual plan for the site as well as in detail site plans for development areas.

This project does a little more than present the idea of total concept planning. It focusses on the importance of the ecological bias in dictating future planning and land use where county boundaries are involved. Waimairi County extends back a distance of some three to four chains from the beach where the land then comes under the Christchurch City Council's jurisdiction. Christchurch City thus controls most of the stabilised zone which is planted in pine forest. The roading pattern suggested by the team ignores the County boundaries at certain points and in fact the design proposals are made for the area as a whole and not specifically for the foreshore strip. The ecological input must ignore political boundaries in order to provide an overall basis for land planning.

#### WAIMAKARIRI BASIN—RECREATIONAL DEVELOPMENT STUDY

Over the past five years there has been comment and concern on the ability of the Waimakariri Basin to support recreational development. Late in 1970 a development company made application to the County for a change of land use to allow the development of a resort village at

Castle Hill. In May of this year the Town Planning Committee of the County heard submissions from the applicant company and 23 objectors. Among the objectors were the Tussock Grasslands and Mountain Lands Institute which stated—“We do not object in principle to the concept of a recreational centre on the Castle Hill run. Our concern is that at this point in time [11 May, 1971] the County does not have before it sufficient information on which to make a decision with appropriate consideration of the environment and the people who share in it”. For the guidance of the County and other interested parties the Institute offered as an appendix to its submission a “Recreational Planning Procedure for the Waimakariri Catchment, with special reference to the Castle Hill Basin”. In June 1971 the Institute decided that it would accept responsibility for the assembly and appraisal of information about the area. This study is divided into two parts. Part I is concerned with the Waimakariri Basin generally and Part II with the Castle Hill Basin. Within each part there are two sections.

Section A is an analysis and appraisal of the physical environment. The object here is to examine the physical environment in order to understand the limitations which the environment itself places on recreational use and development. This includes the establishment and servicing of temporary or permanent human accommodation, whether in the form of resort village or any other form. The following significant factors are being given attention: geology and physiography, soils, hydrology, vegetation, wildlife and climate. Paralleling this the visual environment is surveyed and appraised in terms of character, visual qualities, views, restraints, etc.

Section B consists of an analysis and appraisal of the cultural environment. The object is to understand the current and projected socio-economic conditions of the region in order to understand the constraints which these factors place on recreation and development. Included in this section are such aspects as population, communication, recreational use, degree of use and projected future use.

The Waimakariri Basin is studied in detail in Part I and from this sites suitable for recreation development are derived, based on their visual, ecological and social suitability. The Castle Hill area, as anticipated, figures prominently as a suitable site, but it has been looked at as a part of the entire Waimakariri Basin and not in isolation. Part II involves a more detailed study of the Castle Hill area to determine the most suitable site or sites for development. An extremely important factor which has come to light is the ability of the soils to absorb phosphate from sewage effluent. The capability and the rate of phosphate absorption of the soils which can be irrigated may be the key to the size of a development and determine its success or failure. On the other hand fault lines and crush zones, which at first appeared to rule out most of the suitable sites, do not influence the sites to any great extent. As well as locating a suitable site or sites for recreational development we propose to formulate site planning standards which would be acceptable in that particular environment and for each individual site. It is envisaged that the study will be published and available in 1972.

#### CONCLUSION

Landscape architecture owes much of its recent progress to ecology and, on the other hand, the

application of modern ecology owes much to landscape architecture. Architecture in many instances relies on the engineering disciplines. An architect may design a multi-storey hotel but will rely on his structural engineer to make sure that it stands up. He may also utilise the services of the electrical engineer and mechanical and sanitary engineers. The success or failure of the total project rests on all of these professional people. The building may appear as a visual gem but if the lights, air-conditioning and plumbing don't work effectively then the project as a whole may be a flop and a financial disaster. Like architecture, landscape architecture relies on ecologists in order to achieve together the best environmentally viable design solutions. We both need each other and together the others need us.

At this point in time we in New Zealand badly need to develop some effective channels of communication between ourselves and other land-planning disciplines. Outwardly we are all promoting environmental quality but internally we are not communicating at all. Ecology and landscape architecture are both essential land planning disciplines so let's get together and get down to the job of improving and making our physical environment a healthy and beautiful place.