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Gloucestershire College of Arts & Technology

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LANDSCAPE ISSUES

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Editorial policy is to include articles, reports, reviews, dissertation and research seminar abstracts concerning a wide range of landscape-related issues. Papers with a bias towards any aspect of rural landscape, landscape education or computer use are of particular interest. Contributions are welcome.

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FOREWORD

Landscape architecture in Britain has been rather lax in its publication of information. With a few notable exceptions the background research and theory by which contemporary development in the discipline is taking place remains hidden or obscure. I think the responsibility for recording and predicting that development rests largely in the hands of the educational establishments. Here at the Gloucestershire College of Arts & Technology landscape architecture has been taught for over twenty years. We feel the time has come when we should make a collective effort to contribute to the dispersal of the research and theory we rely upon to underpin our teaching.

We intend to start in a modest way and our immediate objectives will be rather limited. The aspects of our work concerned with design, computer use and rural rather than urban matters will predominate. The future development of this periodical will, however, depend upon the interests shown by its subscribers. Articles from anyone will be considered by the editorial panel. We hope that Landscape Issues will not only contain articles from current members of the School of Landscape Architecture but from past students and interested outsiders.

I hope that our contribution to the store of knowledge associated with landscape architecture will be interesting and stimulating. Do let us know what you think of our venture.

Gordon Hyden
Head of Department
Landscape Architecture

REMOTE SENSING BY RADIO CONTROL

R.J. Moore

ONE SIGNIFICANT drawback to the greater use of aerial photographs in landscape studies in this country must surely be the prohibitive cost of black and white and, particularly, colour prints. For example, the current price list from a large UK commercial supplier indicates for a single black and white print on a 230 x 230mm (9 x 9 inch) format the cost is £15.00. If coverage of the area(s) of interest is not sufficiently recent or at the required scale, then one can think in terms of hundreds of pounds to commission an aircraft to take the desired photographs, be they verticals or obliques.

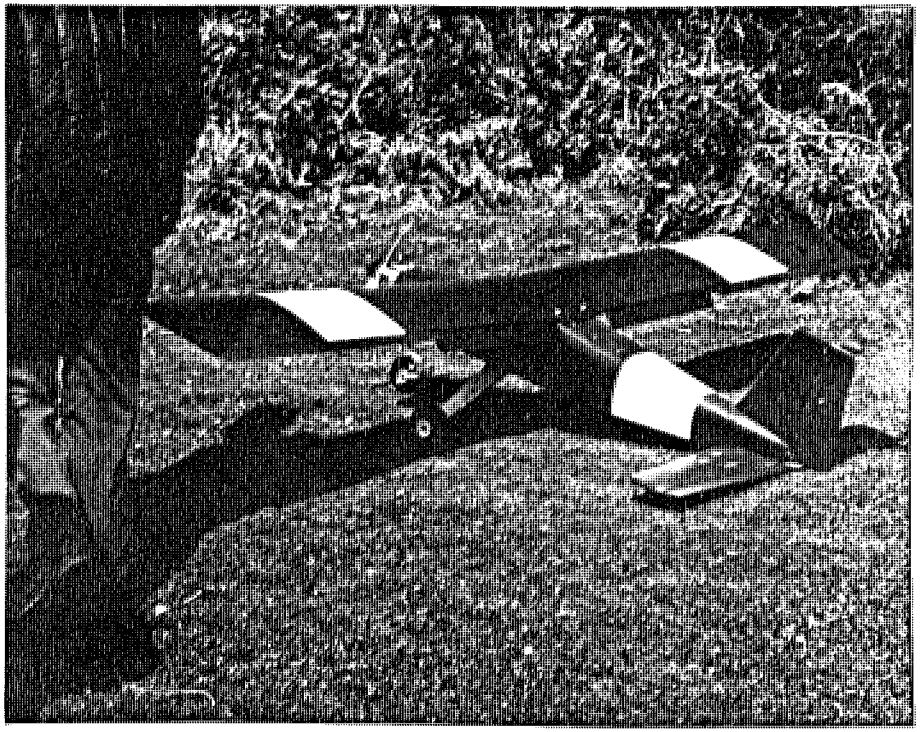

Figure 1 Remotely controlled model aircraft fitted with camera

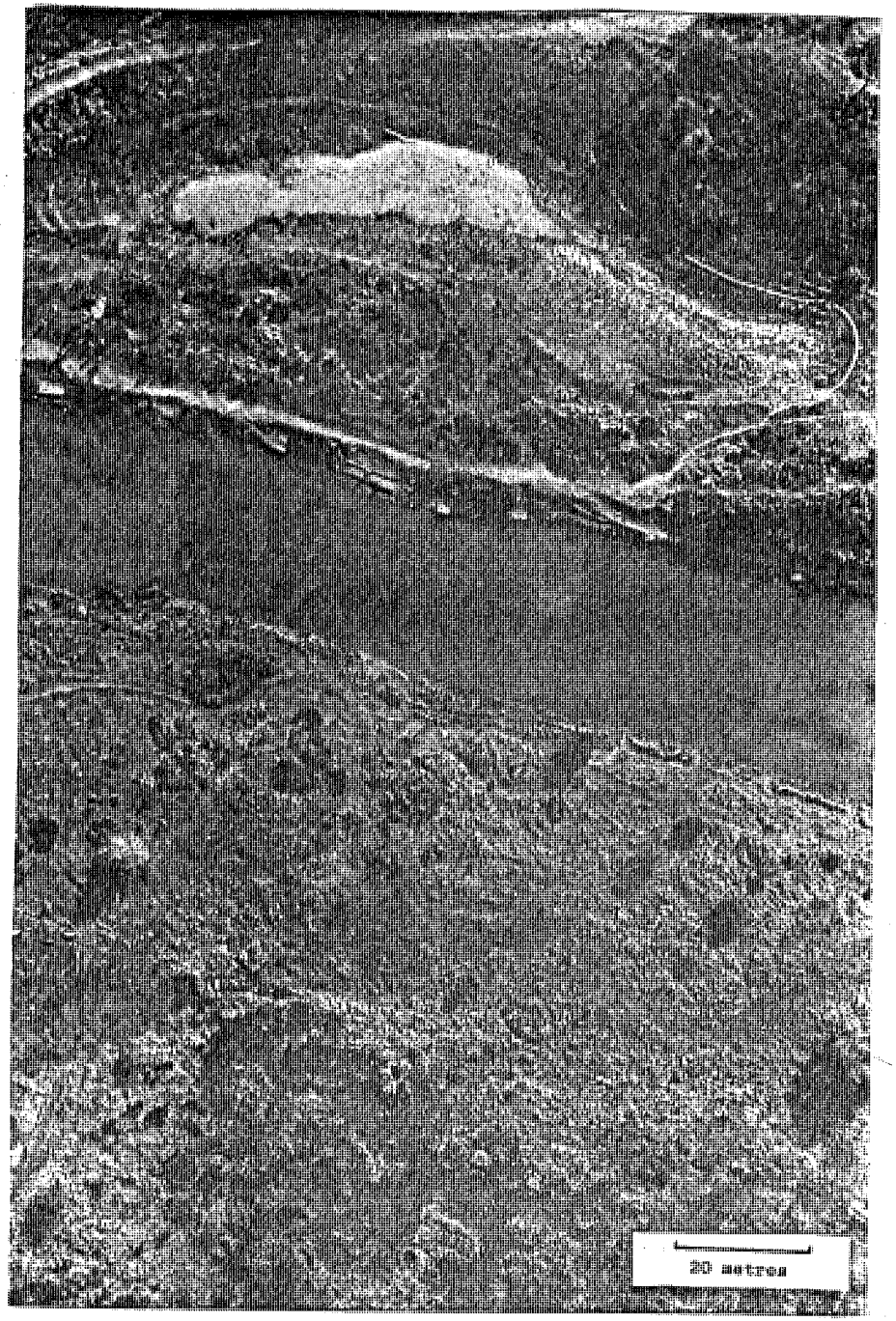

Figure 2 Part of the Lightmoor site, Forest of Dean

This conventional method certainly achieves a high level of precision, resolution and relative lack of distortion in the photographs produced, particularly important essentials for photogrammetry, that is the science of obtaining reliable measurements from photographs for application in map production. In terms of photo-interpretation, however, that is the study of images of photographed objects and the deduction of their significance, the need to suppress camera tilt and other causes of distortion to a minimum is not so important, since the technique is based more on qualitative than quantitative procedures.

The 1983 first year science exercise (on the Gloucester Landscape course) was novel in the sense that air photo coverage needed for ecological interpretive work of the site was obtained from a 35mm camera mounted in the fuselage of a radio controlled model aircraft (fig. 1). With a wingspan of 2.6m it can fly at altitudes of up to 200m, giving a scale of approximately 1:1000 on 130 x 180mm prints.

The aircraft is operated by Iris Surveys Ltd of Stroud, Gloucestershire, and the service includes both the taking of the pictures and the developing and printing of the film. Commonly this is black and white or colour, but recent work by the company has included the use of infra-red film to detect stress in the vegetation cover around landfill sites (Weltman, 1983). Because of the flexibility of the system operating costs are significantly lower than the alternatives described above, especially when sites are relatively small (around 20 hectares) and located not too distant from 'base'.

The photographs supplied for the science exercise site were of perfectly adequate quality for the interpretive work undertaken on them in terms of both vegetation identification and zoning as well as providing a useful general picture of the terrain and a map base. In one or two cases the photographs suffered from some tilt-distortion caused by the strong wind, producing a mild oblique effect, but as stated above this does not unduly hamper interpretation. Fig. 2 is an example, allowing for some deterioration in the reproduction, of part of the the photo-mosaic of the site.

Reference

Weltman A. (1983) The use of aerial infra-red photography for the detection of methane from landfills, Ground Engineering, April, pp22-23

DESIGN METHOD IN LANDSCAPE ARCHITECTURE

A.D. Pinder

I STARTED to develop a particular interest in 'how' designers design - as distinct to 'what' they design - when I first started a serious study of landscape architecture. That thinking was prompted by a growing realization that the differences between that subject and architecture (of which I had some previous experience) were more fundamental than I had anticipated.

Initially, my interest centred on the ways in which landscape design conclusions might best be presented, and the kinds of information that such presentations should contain if those conclusions were to be understood. My approach to architecture was such that the personal value criteria which I imposed upon myself were clearly expressed by the buildings I designed. There was no need to make explicit statements of those values. However, I found that this was rarely the case with my landscape projects. As a student I was concerned that my assessors might not perceive the arguments which supported my proposals - but more importantly, I was worried about the ethical position of offering a client conclusions based on values that might not be shared. It seemed (and still seems) important that values should be exposed for criticism as much as are proposals.

The conclusions which I reached then are not germane for this paper. What is important is that the work involved retrospective consideration of my design thinking and the re-organization of those thoughts for presentational purposes.

My interest in how designers design increased considerably when I started to teach, for helping students learn how to do that was, in a large part, what I was employed to do. I discovered that my retrospective analysis of my own designing had many similarities with some of the theories that then had some currency amongst design methodologists. In particular, I made reference to Archer (1965); that generation of theories was primarily concerned to modify designerly behaviour. The motivation - to improve the quality of

the product by improving the processes by which it was produced - was entirely laudable. Schemes were proposed with the objective of ensuring that all relevant information was taken into consideration at those times at which different kinds of information were critical. (For a concise summary of the history of design methodology, see Cross, 1980.)

What I discovered from this reading was that the conclusions I had reached about how best to present design considerations had much in common with the ways these theorists suggested the work should have been originally undertaken.

In the light of this theory, I expanded my earlier thinking to give a methodological scheme for landscape design. I have described this more fully elsewhere (Pinder 1980) and so will only outline its content here.

Alexander (1964) defines designing as being "the search for fit between form and context". I was particularly conscious that for landscape design (as with architecture and some others) 'context' has particular significance for it has a physical expression in the 'site'. Unlike many design disciplines the specifics of the context of a landscape design project can be identified through examination of an identifiable place and of the ways in which it is used or abused. My scheme reflected that fact, which constituted the major modification of then current theory (see figure 1).

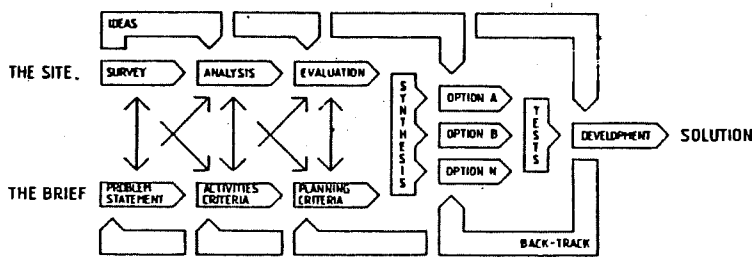

Figure 1

The implication of this diagram is that landscape designing is (or should be) undertaken as a series of discrete activities starting with an outline statement of the matter to be resolved and with a close examination of the nature of the site, with each stage

informing those parallel and following it until all the information from both sources is understood such as to allow ways of responding to that brief on that site, to be generated and considered. It recognises that ideas about any stage may appear at any time but says that consideration of those ideas should be delayed until appropriate. It also recognises that nobody is perfect and omissions may occur, but says that in such an event work should return to the stage at which that information was omitted.

This diagram was elaborated by suggesting that it constituted a cycle within the totality of a landscape design project which is completed three or four times, with each cycle undertaking consideration of finer levels of detail.

Theory of the kind of which my model is a late example, attracted criticism through the 1970's. Walker (1976), for example, protested that it denied the designer's experience in its suggestion that pre-existing understanding might not allow a legitimate start to be made somewhere other than with survey and/or outline brief. He argued that a designer can rapidly decide what it is that will not be done and so reduce the 'solution space' to a few 'strategic options'. Experimental work by Eastman (1970) and Darke (1979) supports that argument.

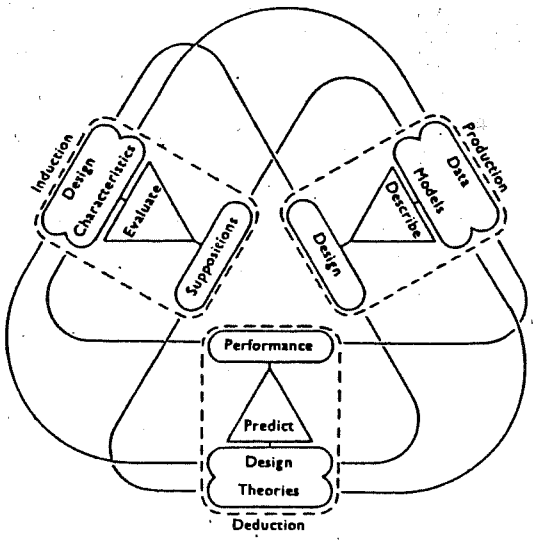

Figure 2

March (1976) offers a model based on such an analysis of Design methodology (see fig. 2). He suggests that the work starts with a preliminary understanding of a way in which the object to be designed might be. This proto-model is a synthesis of the designer's initial understanding. It is a possible answer to questions which are themselves imperfectly understood. The likely performance of the proto-model can be tested against those initial questions and as a result the designer gains a clearer understanding of her or his ambitions for the object being designed. This enhanced understanding allows modification of the proto-model which, through test, will give a yet clearer understanding of ambitions and so lead to its further modification.

March argues that this cycle may be completed innumerable times and at a variety of paces, with the direction of movement sometimes reversing as the developing model prompts thoughts about ambitions and/or the validity of ambitions are checked against that which is understood about required performance.

My experience of designing, and of observing others design, makes this model seem very familiar, but I would elaborate in two respects. Firstly I would add that the proto-models (one for the object-as-might-be and the other for the questions-to-be-answered) may well not be explicit. Whilst circumstances where the proto-models synthesise generalised understanding of a particular category of artifacts (when designing a variety of chair for example, and the proto-models express essential 'chairness') could well be in the majority, there are significant occasions when the subject of the design work has radical novelty and then the heuristics (one, other or both) must be metaphoric.

Secondly, the model would be better drawn with a third dimension (giving 'columns' and a triple helix). It could then reflect those circumstances when the thinking moves directly ahead, when ideas for radical modification of the proto-models have been generated, or returns to re-consider previous decisions in the light of better information.

It is in the nature of succeeding generations to assume that their predecessors were misguided, misinformed or muddled. If this were not so, then the human species would have made little intellectual progress. But such criticism tends to be accompanied by the 'baby and the bathwater' syndrome. To mix my metaphors, the pendulum swings

too far. I am convinced that the first generation of design methodologists did not get it all wrong. Consideration of landscape designing supports this conviction, and I suspect that parallels would be found in other design subjects.

To return to Alexander's definition of design and my arguments that for landscape designers 'context' can be described as the system of which the 'site' is a current expression, whilst 'form' can be taken as being the system of which the site will be an expression after those modifications which enhance the quality of 'fit'.

It can be reasonably argued that for some kinds of landscape design, imperatives will be generated by context. The proto-model will be given by an understanding of the way(s) in which the system-as-is, will evolve over a relevant period into the future. With such understanding, the landscape designer can compare the behaviour of the system-as-will-be with that required of the form-to-be-designed. These comparisons will indicate the ways in which the evolution of the existing context must be modified in order that appropriate form is achieved. Landscape design work of this kind might be described as evolutionary.

It can be equally reasonably argued that with some kinds of landscape design work the nature of the existing context is of little immediate consequence. The natures of the forms which would satisfy designerly intentions are such that it is inevitable that context will have to be radically modified. Proto-models will, then, be given by an understanding of the necessary behaviour of the system-that-will-be and design imperatives will be generated by the qualities required of form. Landscape design work of this kind might be described as revolutionary.

It should be stressed that entirely evolutionary or revolutionary design is beyond landscape architecture. All landscape projects, whilst perhaps characterised by one approach, will contain aspects of the other. Moreover, and in many ways more importantly, the majority of landscape design work will offer the designer the option of which of these general approaches will be allowed to dominate, and in which parts. This decision will be informed by the designer's philosophies and by the potential of either possible form or existing

context, to satisfy that philosophical position. The landscape designer who finds current context to have a validity that should be conserved, will adopt an evolutionary approach; given that the formal constraints allow it. Conversely, one who sees potential for productive novelty in those formal constraints will adopt a revolutionary strategy.

(This argument is somewhat abbreviated. There are many subtleties which condition it. For example, a landscape designer may adopt a revolutionary methodology for form with the aim of enhancing the qualities of existing context, through contrast. Also, revolutionary form may only be revolutionary in that context - it might itself have evolved from forms suggested by other contexts. But these subtleties only condition the argument, they do not refute it.)

As I have said, an evolutionary landscape design methodology will require an initial careful and complete investigation of existing context, with completeness being defined by an understanding of the behavioural nature of the systems which would support appropriate form. To understand both the system-as-is and the system-to-be, will require analysis of this initial understanding followed by evaluation of the relative significance of the parts identified by that analysis. It will then be possible to synthesise options for the modification of the system-as-is so that it evolves into the system-to-be. All this is very close to being a verbal translation of my first figure.

It is perhaps not necessary to show that my second figure describes revolutionary landscape design methodology, starting as it does with a concept of possible form that is investigated in terms of its own required performance making reference to site qualities a secondary concern.

My motives for writing this paper are twofold. Firstly, I suspect that the majority of landscape designers and landscape design students, have a predisposition towards evolutionary philosophies. This I do not criticise. However, I also suspect that many confuse evolution in terms of form with evolution in terms of context. That is, they fail to recognise when a revolutionary design methodology would be the most appropriate way of responding to an evolutionary philosophy. The

adoption of an explicit proto-model for possible form within a holistic approach to designing as March has described, must be more effective in such circumstances. All of my experience as a designer and as a design teacher, shows that it is better to recognise inflexible constraints from the outset and to design accordingly, rather than to have to modify ambitions in the light of inflexibility discovered after those ambitions have been established. Many kinde of landscape design work have relatively inflexible formal constraints which the adoption of a revolutionary holistic methodology would rapidly expose, whilst they could well remain unexposed with an evolutionary approach, with the risks described above.

So, I am motivated to direct this paper at landscape designers because I believe that they too infrequently disregard revolutionary design methodologies. I would direct it at designers from other subjects because it seems possible that they too infrequently disregard evolutionary approaches.

For most designers, context does not have the same explicit physical expression as it does for landscape architects. For most it is a kind of a place rather than a specific place. Moreover, in many circumstances it is only the abstract qualities of that kind of place that can be identified. Identification of an abstract system is difficult, for being abstract there can be no initial certainty about what or where it is - it offers no overt clues about itself. It is always too easy to justify not doing work that is difficult. This is particularly the case for designers who, in many ways, have been trained to proceed on assumptions based on available information. However, if Alexander's definition is accepted, understanding context is essential if quality of fit is to be assessed. Perhaps our world would have fewer badly designed artifacts if more designers adopted evolutionary methodologies.

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PROVOKING THE NATIVES

Martin & Jane Spray

"EVERYTHING" said John Loudon in the early nineteenth century -

> Everything in modern gardening depends on the use of foreign trees and shrubs. No residence in the modern style can have claim to be considered as laid out in good taste, in which all the trees and shrubs employed are not either foreign ones or improved varieties of indigenous ones.

Like many things in our society, landscape planting is subject to fashion. Now, interest in the use of native plants is well established and continues to grow. Landscape Design has added to a considerable literature on the subject - in a debate which is also continuing in Gardeners Chronicle[1]. This article will consider the several reasons for using native species, and the different approaches to their use in our towns and cities[2].

REASONS FOR USING NATIVE SPECIES

There are perhaps three main motives for using native plants in urban landscape schemes today, besides the ubiquitous concern to reduce maintenance costs:

+ for conservation and environmental reasons;
+ for reclamation;
+ for aesthetic reasons.

'Conservation'

Native planting is strongly advocated by many people who are motivated by an environmental or conservation ethic, and wish to break away from the conventional - and, to them, stereotyped and inadequate - planting they see around them. Many of them are naturalists and environmentalists; but an increasing number of landscape architects, and many students, appear to feel the same way. Most of the attempts in this direction are still tentative and experimental.

What they feel is that greater public awareness and appreciation of 'Nature' is needed in order successfully to promote conservation, and thus have some hope of saving threatened species and habitats; and that our urban spaces could be made more varied, more intriguing, and perhaps less bland and 'rational', by bringing something of the countryside into the city. Many also claim that as the native fauna and flora are increasingly threatened by agriculture, mineral extraction and recreation, new 'havens' are needed, and that to some extent these can be provided in urban areas.

'Conservation' is undoubtedly the main motivation of advocates of the use of indigenous plants.

Reclamation

In many situations, especially for reclamation work, there is a need, because of environmental and financial limitations, to exploit almost anything that will give a vegetative cover. In such circumstances, where (and how) the plants originate may not be very important. There is still much work to be done, exploring more of the potential of the British flora.

Aesthetics

To some landscape and garden designers, many native plants have aesthetic qualities which make them attractive. They are seen as ways of extending beyond the more 'conventional' range of plants normally used in landscape schemes.

APPROACHES TO THE USE OF NATIVES

If one looks at how native plants are used, one can see some four approaches[3]. (We have given them rather formal titles in an attempt to make them clear.)

1. Native species cover - In this country, perhaps the first and still the most advanced recent exploitation of indigenous species is in reclamation work. Several biologists have developed techniques which make use of the ability of a number of plants to cope with the harsher manmade situations. Not all these plants, of course, are native; and a considerable amount of strain

selection may be needed before a species is useful. This sort of work grades into agricultural use. In many cases the vegetation produced is based on only a few kinds of plant, and is, at least initially, simple in structure.

ii. Natural community planting - Some designers are attempting to create more or less naturally structured vegetation: vegetation which in terms of layers and numbers of species is more complex than that which is normally designed by landscape architects using exotic and horticultural plants and aiming at 'conventional' planting. Although these attempts have mostly an environmentalist origin, some are made in the hope of producing visually more interesting vegetation. Sometimes, the main objective is to provide greater stimulation for education or play.

iii. Spontaneous cover - Concurrent with the interest in the deliberate use of natives is a growing enthusiasm for 'seeing what's there' - and, even, for 'letting it be' - and of planning uses of a site accordingly. The idea here is that some sites can quite successfully be used by exploiting and subtly managing what grows on them spontaneously, or as a result of former neglect.. Alien species, especially relict garden plants, often feature in such vegetation in cities. Depending on site conditions, how long a site has been left to vegetate, and the particular plants that are there, the vegetation may be more or less completely structured than conventional landscape planting. It is often much more so.

iv. Native species designs - British landscape architects tend - at least when working on urban public open space schemes (Spray and Hutchinson, 1982) - to use a fairly predictable, limited, range of plants. Most are horticultural varieties; and the overwhelming majority (some 95% of the most frequent plants) are non-herbaceous. Most of them are exotics. Where designers are experimenting with

more indigenous plants, they are often used in what has been called the "artificial method". The vegetation produced is likely to be only slightly more naturally structured than conventional planting - naturalness is not the intention. As much as anything, the plants' sculptural and chromatic qualities are being investigated. These designs may or may not include some exotics, so that there are:

a) Impure native species designs - in which natives and exotics are used together, regardless of their origins or 'naturalness', and

b) Pure native species designs - where only natives are used, perhaps because of an associated desire to express an environmentalist attitude.

QUESTIONS AND CONFLICTS

As these different approaches suggest, there are several choices to be made when using our native flora in urban situations. Yet when one comes to examine some of the schemes on the ground, the rationale behind them and the appropriateness of the types of vegetation chosen are not always clear. Many of the attempts are idealist, and leave unexplored some basic questions:

+ How far is it appropriate to be purist, and avoid exotics?
+ Where and when should natural community planting be used? When is an increase in structural complexity important?
+ Where and when do the advantages of spontaneous cover outweigh the advantages of planned and planted vegetation?
+ What do the results look like? How well do they "function"?
+ How much are the attempts understood by the public? Indeed, who are we providing for?

Conflicts are likely between conventional landscape design (as practised in Britain) and naturalism. As the overriding concern in landscape work is manifestly aesthetics, this is a conflict between imposed and intrinsic aesthetics: natural, spontaneous, and to a large extent seminatural, vegetation has aesthetic qualities often quite different from the culturally determined

preconceptions offered by landscape designers, and received by the public. As we are culturally conditioned largely to reject 'naturalness' - and not only in terms of vegetation - many attempts to explore and exploit native species result in frustration, at least in the short term, because they are not understood.

Perhaps this means no more than that these naturalistic experiments with natural community planting and spontaneous cover (native species designs tend, of course, to follow conventional patterns of structure and colour) are exploratory and novel, and that we need to be patient a while longer. They may then become more widely understood and accepted. So far, it is inevitably largely naturalists, conservationists and some educators who are promoting them, and who, along with children, find them especially acceptable.

There seems, however, to be a danger of oversimplifying the debate, which should not be a matter of either use natives or use exotics: we ought to continue improving the use of both. There are important roles for exotics, as well as natives, in improving the urban environment. For instance, it is often stressed that seminatural and naturalistic vegetation is especially valuable for children - educationally, and for play. So it can be: however, as far as play is concerned, children make exceptionally good use of 'impure' vegetation - for instance derelict gardens, in which overgrown plants such as privet, tall grass and invaders such as Polygonum cuspidatum increase the potential for adventure.

An advantage of this sort of impure vegetation is that it can be made very tough! However, attractive and exciting as it may seem through a child's eyes - and to all his senses - to an adult it may just look a mess.

It seems to be largely agreed, when designers discuss the matter, that the main function of urban vegetation (all vegetation?) is aesthetic. To people used only to our present urban parks, gardens and grasslands, 'ecologically' developed areas probably appear not only unusual but also unkempt. It may be important that at least the more prominent parts of native-species sites be seen by the adult public to be deliberate, and obviously under control. They should, in the words of a participant in an urban conservation project, show a "planned unplannedness".

One potentially difficult aspect is the fact that much of this sort of vegetation succeeds: that is, unless checked the composition and structure change in time, until something like stability is reached. Many areas of spontaneous cover, and some natural community plantings, change in this way. The problem seems to be twofold: Some stages of the succession may be inevitably 'weedy', and - to all but the naturalist - less attractive than other stages. Moreover, many adults cannot, because of their conditioning, accept this sort of change: the status quo may be all important. Few conventional landscape plantings are designed to develop in this sort of way.

Charges of "untidy, shoddy, unattractive" have been levelled at sites, for instance 'urban nature reserves', parts of school grounds, and a number of 'amenity' projects by community groups. We are so conditioned to 'tidiness' - many people, especially the elderly, expect all our landscaping to be thoroughly manicured, whether urban or rural - that new types of vegetation, and new types of management, may not be recognised as planned and deliberate. And, indeed, in such cultural terms, they are inappropriate.

In one respect, the charge of "unattractive" is accurate. Notwithstanding what was written earlier, two things that most people - certainly most older city dwellers - long for are colour and brightness. This is what they try to provide in their own gardens. These desires, together with that for the exotic, are amongst the most important roots of all traditions of ornamental gardening, which itself, is an important root or urban landscape planting in our culture. British vegetation, even under relatively natural conditions, is not often flamboyant ..... [4].

COMPROMISES

This article is not a plea for abandoning attempts to establish more 'natural' urban vegetation. We believe the value of it has been established. Rather, what we would like to see is a better and wider dissemination of information, for instance on methods of introduction and control of development, so that over-optimism can be reduced; and, especially we would hope for a fuller analysis of the cultural and social context, as well as the environmental considerations and design implications.

Some compromise is needed. In fact, quite a lot may be needed:

i. Pure native species vegetation is desirable in many, perhaps most, rural sites; but in some, and in the majority of urban situations, a mixture of natives and aliens - as our traditional parks' tree-structure sometimes shows - will be the more appropriate. Where culturally-accepted design is the main consideration, an 'exotic touch' is appropriate, because this is what people appreciate and want.

One might thus argue that most urban plantings should be of this 'impure' nature; or indeed, composed more or less entirely of exotic species and horticultural varieties. Remembering the results of the survey which suggested that British landscape architects tend to use a rather limited palette, we would particularly urge variety.

ii. Natural-looking vegetation is not necessarily composed solely of indigenous species. Woodland spontaneously colonised by the weed Sycamore appears to many people quite as natural as most other British woodland - almost all of which is of planted origin anyway. Mixtures of natives and exotics, forming a closed vegetation, can be attractive and quite diverse. Urban wasteland often testifies to this; for instance where Buddleia has colonised, or where Michaelmas Daisy is a relict of some garden. Indeed, in these cases, insect life may also be prominent and attractive.

Such 'impure' vegetation, moreover, may be hardwearing, and especially appealing to those very people we usually don't design for - children. Wasteground or derelict gardens with, for example, tangles of Brambles, old Privet hedges, and stands of Sallow or Japanese Knotweed, provide plenty of adventure, intrigue and education. People can use this sort of vegetation. Such a case is obviously a compromise on the pure naturalists' hopes and the designers' preconceptions. It is not, however, such a long way from the specifically designed adventure garden planted, say, with groves of Bamboos ....

iii. Aiming for an ecologically complete vegetation structure may be unrealistic, in areas where heavy wear can be expected. Here, of course, two compromises are possible: opting for a relatively incomplete structure, without trying to maintain the more delicate components and relying on use to minimise weed problems; or opting for an oriental attitude - by restricting access, and producing landscapes for the eyes and the heart.

iv. Compromises may be necessary where there are dispersal (availability) problems. Here, one might opt for a rather lower diversity than the ideal, or might put more effort into introducing species. These introductions themselves might not be ideal species: seed stock of only a limited number of native plants is yet available in Britain. There is, of course, a problem and a further compromise here: some purists will not use Continental forms of British natives, and they have strong botanical support. What (one must ask), in each case, is most important - to have variety and attractive 'wild flowers', or to have limited variety and colour? The problem is compounded because of costs. Many schemes which otherwise would include native species cannot, because of the high expense of raising and collecting seeds. Many wild types are not very prolific, and germinate erratically, which is why the easier, carefully selected cultivated forms are often the only ones available.

A number of 'wild flower mixes' on the market are very unsatisfactory, as they include unsuitable species of dubious origin. At least one 'short grassland mix' includes species growing to 1m!

There is a further compromise which, in urban areas, seems sensible. Many naturalists are concerned not only that introducing alien varieties of native plants, but also indigenous plants to areas in which they do not occur naturally, should be minimal. The arguments for not so mixing genotypes are realistic; but seem rather irrelevant when this could mean not increasing variety in depauperate areas.

v. Perhaps we are inclined to underestimate the commonplace. In urban areas especially, there should be a case for exploiting the more colourful or otherwise interesting common species. Indeed, we can introduce rustic elements in the form of blackberries to be picked (except in that there are health risks from pollutants), Small Tortoise-shell butterflies around the Nettle bed, and a speckle of colour from Dandelions and Knapweeds, without the problems inherent in, say, trying to establish an area of heathland or species-rich meadow. Again, we often forget how, and by whom, such sites ought to be used, and forget how precious usable open space is in some built-up areas. Suitably treated 'wasteland' (maybe simply cleared of litter) can provide much.

vi. Little information is yet available on the management and maintenance of natural community plantings, and of native species generally. Some of the more ambitious experiments may not prove to be especially inexpensive to manage; and compromises forced by cost may be prudent. There are often problems with weeds, in some of the early successional stages of grassland and scrub, for instance. These weed problems are commonly exacerbated in vegetation which was intended to be naturally colonised, but which remains species-poor because the desired plants cannot reach it. This is a common misunderstanding. It is no good designing and managing for a high diversity of attractive native herbs, and for an abundance of animal life, if there is little in the neighbourhood to colonise new vegetation. So many 'nature reserves', including school grounds, remain depauperate, because seeding populations of the desired species are not available. Moreover, many which do arrive fail to colonise, because the needs of establishment are not understood.

THE DESIGNER

Such compromises as these would probably make the 'native plant movement' both more realistic, and more acceptable to public and profession alike. Appropriate compromise can be very successful

with good, thoughtful design - working with and learning from 'Nature', whilst paying due respect to culture.

It is not always realised that there can be more to designing landscapes satisfactory to a large proportion of people than the usual drawing-board-based process. Those designers who have been involved with the 'native plants movement' have tended to find themselves in novel situations - working with members of the public. This is a welcome change - not least amongst landscape students. Even the most humble of projects can often benefit from landscape architectural expertise.

Although we would not wish to appear to be suggesting that the landscape architect is the only competent designer of vegetation, or indeed that the profession always has to be present, it does seem important to have more landscape architects able to work on native-species schemes.

As Repton commented in his Inquiry into the changes of taste in landscape gardening:

> every revolution in the taste of a country may be accounted for on the same principles with the revolutions in its laws, its customs and opinions - the love of change or novelty in a few, and of sameness or imitation in the many.

Notes

1. Some of the ideas presented here have been aired in GC&HTJ during the past couple of years.

2. We have skirted one fundamental question: whether or not the distinction between town and country, which has historically remained a crucial feature of our culture, should be increasingly eroded. Obviously, the increasing interest in the sorts of naturalistic vegetation being tried is support for the tendency to blur that distinction. How much is it understood; and how much is it wanted?

3. Compare the three of Hoyle R. (1977) Native plants in landscape design in Landscape design with plants, ed. B. Clouston, Heinemann.

4. Yet we should try to put this into a context .... "Look at a

field of buttercups and daisies - a hillside covered with gorse and broom - a mountain rich with purple heather, - or a forest-glade, azure with a carpet of wild hyacinths, and they would bear a comparison with any scene the tropics can produce. I have never seen anything more glorious than an old crab tree in full blossom ...." (Alfred Russell Wallace - Darwin's pacemaker - in Travels on the Amazon and Rio Negro etc., 1889.)

Reference

Spray M & Hutchinson J. (1982) Acer to Weigela GC&HTJ August 13, 77-80. See also J.F. Benson (1983) Plants used by landscape architects in North East England Occas. Paper 1, Department of Town & Country Planning, Newcastle University.

COMPUTER-DRAWN CONTOUR MAPS

R.J. Moore

THERE IS a wide spectrum of possible computer applications in landscape architecture. It is in the field of computer graphics and particularly automated cartography that most development has taken place in Gloucester, using a Prime 550 computer linked to a Tektronix high resolution screen and plotter.

Regular features dealing with current computer use and research will occur in forthcoming issues of this periodical. The following article is a description and discussion of one computer program that has provided base contour plans and perspective views for a number of recent student projects.

THE GRAPHICS PACKAGE

The PICASO[1] system that is implemented on the College computer is a comprehensive Fortran-based package that allows the user to "construct concise yet complex programs which generate highly sophisticated graphic effects" (Vince, 1980) in both two and three dimensions. The system includes a large library of shapes and objects (e.g. geometric forms, maps, animal outlines etc.), a range of drawing commands and graphic transformation techniques (e.g. figure rotation, fish-eye viewing) and special functions (e.g. contour generation).

The contouring program has been developed and documented by the College Computer Unit (Fisher, 1983) such that it is fully interactive in the sense that the program runs following a sequence of inputs typed by the user in response to a displayed 'menu' or set of questions on the visual display unit (VDU). As such it can be considered 'user-friendly', with the user requiring only limited knowledge of computing, principally the means to gain access to the software (the programs) via the terminals. Before the contouring program is discussed in detail, however, a brief overview of computer interpolation techniques is given in order to indicate their use and basic procedures.

SURFACE REPRESENTATION BY COMPUTER

The history of the application of computer techniques to the interpolation of contours dates back to the early 1960's when the value of the computer in aiding design work rather than in performing very fast calculations was first recognised in the highway engineering disciplines. The need for spatial interpolation techniques was also obvious in other disciplines, particularly geography, and the development of computer contouring packages owes much to researchers and programmers in these fields.

Basically, the tasks to be performed consist of the following:

1. The storage of a three-dimensional model of the surface by the computer.
   This is normally a three-dimensional array of an independent variable (spot-height values) and two dependent variables (the x and y spatial coordinates of those spot-heights). Storage of such a 'digital terrain model' (DTM) can be in a square grid format, the earliest and perhaps most common system presently

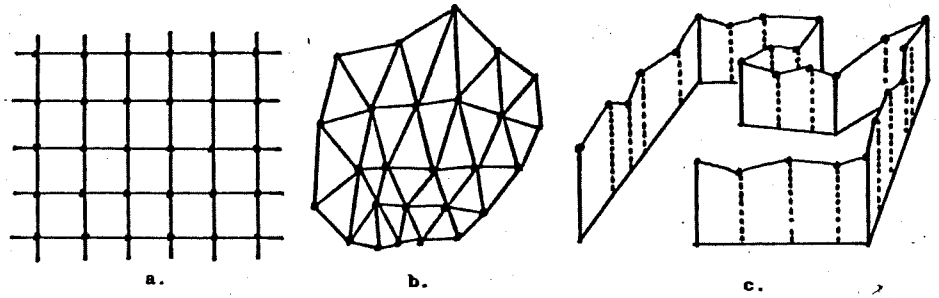


Figure 1 - Systems of storage of digital terrain models

in use (fig. 1a). In computational terms it is a convenient method since its regularity obviates the need to store the coordinates for the grid intersections.
If spot-heights are randomly distributed over the area one is working on, then a triangular network joining all points may be the most efficient method

of storage and the most faithful in terms of representing the surface. The principle adopted is that of producing a mesh of as near equilateral triangles as possible, such that the spot-heights lie at the triangle vertices (fig. 1b)
The third way of storing the data is by a three-dimensional 'string' model, which is regarded as a continuous set of sections or profiles representing the surface (fig. 1c). Here the distribution of spot-heights, as in the triangular system, can be quite random including highly clustered patches.

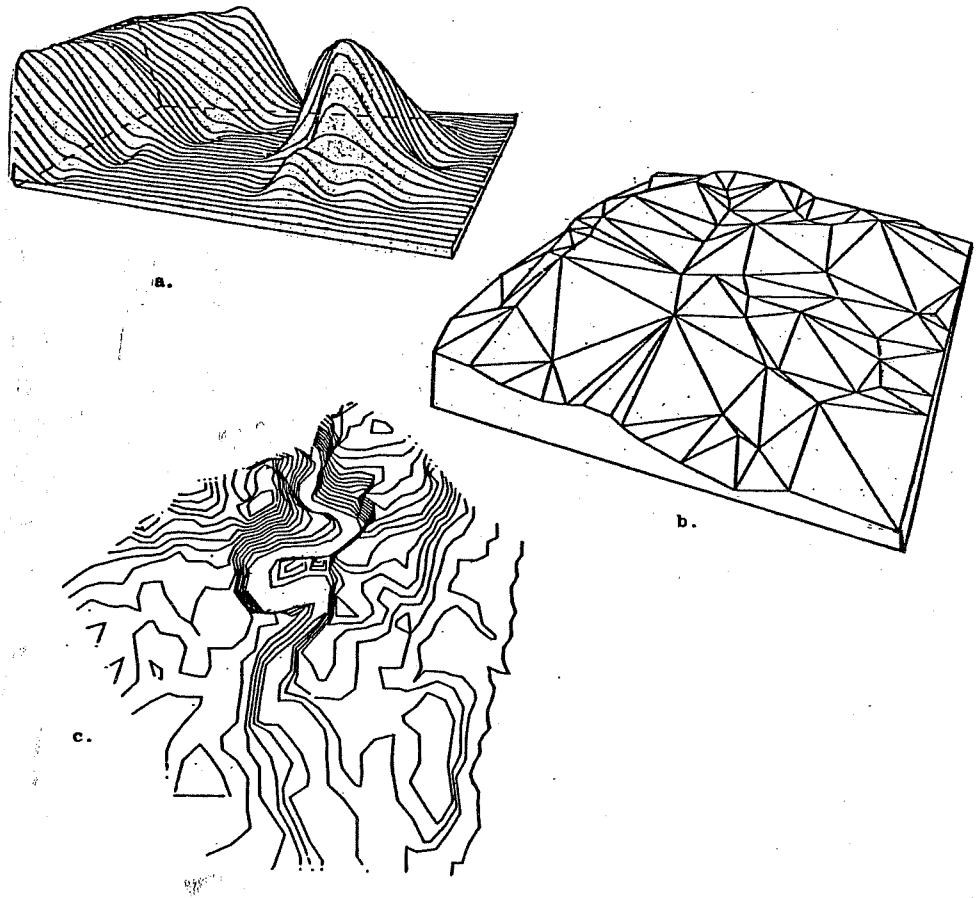


Figure 2 - Three-dimensional representation of surfaces

ii. The production of map output as contours, hillshading, oblique views, etc..

Traditionally most practical use has been made of contour maps and there exists a number of interpolation procedures developed for computers. Rhind (1975) presents a useful survey of the field, but for the purposes of illustration two common methods are:

a) simple linear interpolation on square or triangular facets: if a required contour crosses into a grid cell along one side then its exit point is determined on one of the other edges and a straight line drawn between the points.

b) approximation of a small area of the surface by a mathematical function which fits the data to create a trend surface. Once the analytical expression is derived contouring is identical to a).

In order to produce a map that is more 'acceptable' to the user, certain cosmetic modifications may be required. For example, the angularity of the contours can be smoothed, key contours can be emphasised by line thickness, the contours can be labelled or they can be suppressed in areas of steep terrain. These adjustments certainly improve map readability but only at a price: computing time is increased enormously.

Three-dimensional representations of the surface in the form of obliques or perspectives can also be generated from the DTM and output formats include:

a) a series of cross-sections with hidden lines removed (fig. 2a) viewed from a position that need not be normal to the grid sections.

b) a distorted or transformed grid of squares or triangles (fig. 2b).

c) a series of contours viewed obliquely (fig. 2c).

iii. The calculation of some property or parameter of the

surface at a given location e.g. slope, relief amplitude.

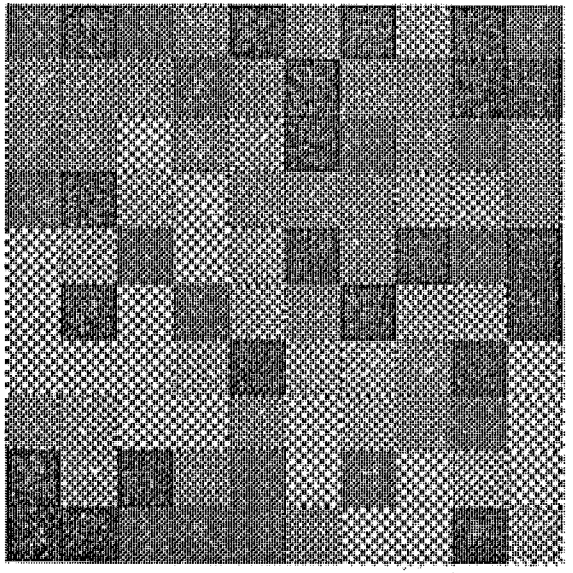


Figure 3 - Relief amplitude as a choropleth map

Fig. 3 is a computer-drawn choropleth (density shaded) map indicating relief amplitude values, computed for each grid square from the highest and lowest spot-height values of the cell nodes.

iv. The calculation of some property of a sub-volume under the surface e.g. cut and fill.

v. The hard-copy[2] output of maps or three-dimensional images. Three main groups exist:

a) flatbed or drum plotters that hold a pen or series of pens capable of movement in both the x and y axes. (The College Tektronix is a flatbed plotter.)

b) raster or scanning devices that produce rows of dots on a printer.

c) ink jet or laser-photo colour plotters whereby zones between contours can be produced as different colours.

THE PICASO CONTOURING PROGRAM

Preparation of data

Contour interpolation using the PICASO program is based upon a square grid of spot-height data - that is the map area can be any rectangular shape so long as the data points are equally spaced in both axes. If the area to be contoured is not rectangular, or if data do not exist or have not been surveyed for a particular patch, then the grid has to be made regular or complete by estimating some heights or by ignoring

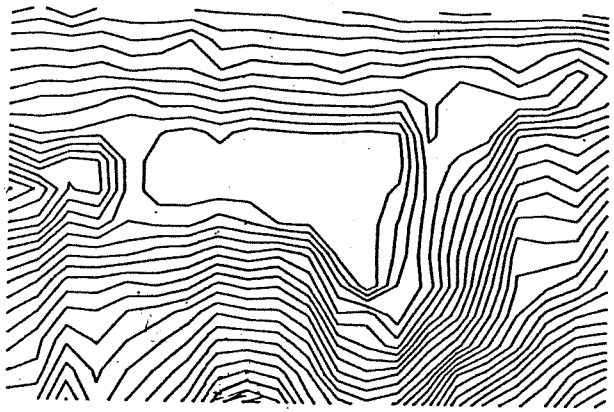


Figure 4 - Two-dimensional contour map

some values. An unsurveyed lake on the site can be given 'unrealistic' values, e.g. less than the lowest spot-height on the site, such that on drawing the map the designation of the contour height range can ignore those low values and the lake area will be left blank (fig. 4).

Because the screen (and also the plotter) is wider than it is high, it is recommended that the grid be orientated with the longer side of the rectangle horizontal.

There is a limit to the number of data points that the program can handle. At present this limit is 1000 points, and since no site to date has provided more than this number no further increase has been found necessary although it is quite feasible to expand the base.

To input the data into the program, for the purpose of creating a data file of the site, it is a relatively simple matter of typing

in the values row by row, as prompted, any corrections being made on completion of this stage.

Drawing a two-dimensional contour map

Once a file has been created that holds the spot-height data of a particular site, then in order to plot a contour map certain parameters have to be specified:

i. contour range - the highest and lowest contours of the range required by the user.

ii. contour interval - at present this should be such that a maximum of 100 contours are drawn.

iii. picture size factor - this determines the scale of the map drawn on the plotter. A factor of 1.0 draws the grid with an interval of 1cm. If the spot-height data are surveyed on a 10m grid in the field, for example, then a size factor of 1.0 produces a map scaled at 1:1000. A size factor of 2.0 in this instance will give a scale of 1:500.

iv. picture origin - the location of the bottom left hand corner of the map. Normally the coordinates chosen are 0.0,0.0.

v. picture shift - this merely 'shifts' the map to a chosen position on the screen or plotter. For example, to relocate the image 5cm to the right and 3.5cm upwards, the values needed to input are simply 5.0 and 3.5.

Fig. 4 is an example of a two-dimensional contour map at a scale of 1:2000 with a contour interval of 1m and a range from 156 to 193m. The picture size factor in this case is 0.5.

Drawing a three-dimensional contour map or perspective view

The five parameter specifications that applied to the two-dimensional map are repeated, but in this case a further three parameters are designated:

i. scale of the height - this governs the vertical exaggeration (or opposite, or lack of) of the perspective view. Its value needs to be determined in relation to

the grid spacing of the spot-heights. If in plan the spot-height matrix has an interval of 10m, then the vertical axis needs to be scaled by a factor of 0.1 to achieve no exaggeration, since the contour interpolation is based on metres not decametres. In this instance a scale factor of 1.0 would result in a ten-times vertical exaggeration.

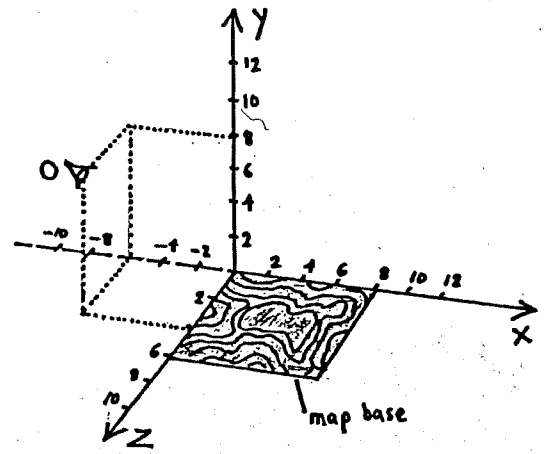


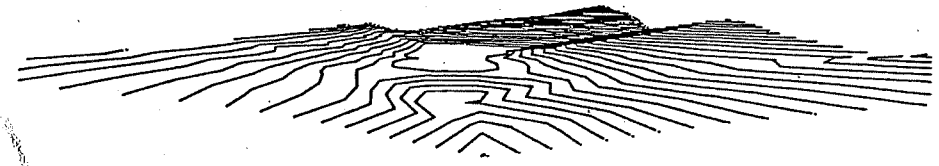
Figure 5 - Determination of viewing point coordinates

ii. eye position - this is the position of the observer in space, giving a bird's eye view, and its unique coordinates are determined in Cartesian fashion (fig. 5). The position of observer O would be given as -6.0,8.0,4.0. The choice of the y value (height) is critical and needs to take account of the height factor. For example, to locate a viewing point at an absolute height above sea-level of 380m and with a scale factor of 0.1, the y value has to be 38.0.

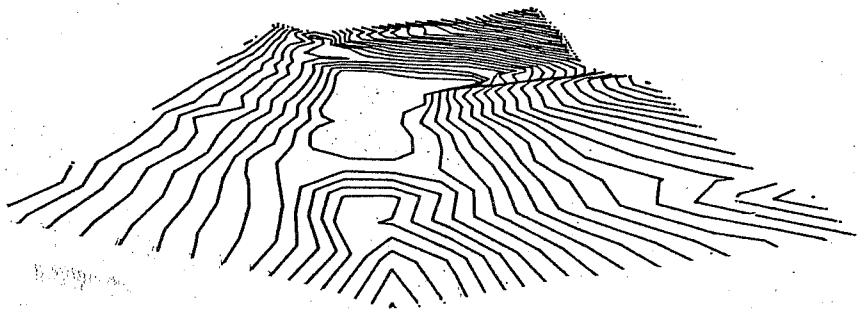
A further consideration is the relationship between the dimensions of the site and a desirable cone of vision[3]. This determines how far away from the site the observer's position (i.e. the x and z coordinates) needs to be in order to reduce the distortion at the edges of the view.

A simple trigonometrical calculation provides this minimum distance.

iii. viewed point - this is the point to which the view is directed. In normal perspective drawing with a horizontal sight line, the y coordinate needs to be the same height as the eye position. The value, however, can be varied to alter the obliquity of the view.



a.



b.

Figure 6 - Contour perspectives

Figs 6a and 6b show the area depicted in fig. 4 as viewed from different heights from the west end looking eastwards. In each case the scale of the height factor is 0.1, and the respective viewing and viewed point coordinates are:

Fig. 6a: -5.0, 19.0, 7.0; 20.0, 19.0, 7.0;
Fig. 6b: -5.0, 25.0, 7.0; 20.0, 25.0, 7.0.

Although in the examples given the line of vision is perpendicular

to the end section giving the impression of a one-point perspective, the computation is actually performed for a two-point perspective thus enabling the user to set up views at any angle to the grid.

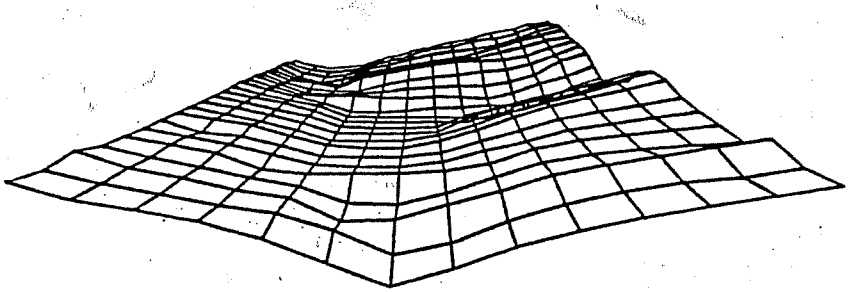


Figure 7 - Net perspective

Drawing a three-dimensional 'net' perspective

This is a recent addition to the program, providing the user with an alternative option of perspective drawing by the method of transforming the grid base into a net of obliquely-viewed squares. The parameter statements are similar to the three-dimensional contour plotting just

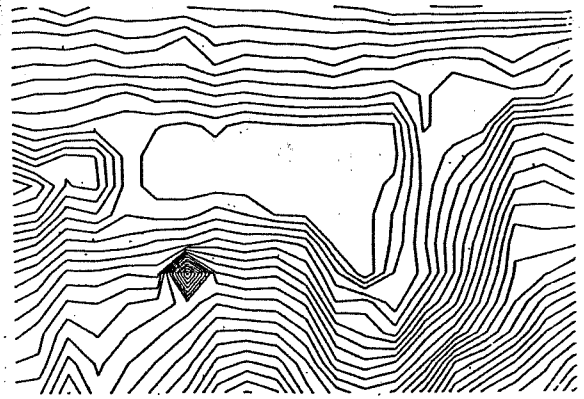


Figure 8 - Data validation

described, with the exception that contour values are not required. Fig. 7 shows the same site and viewpoint as fig. 6b but drawn in the net mode.

EVALUATION OF THE PROGRAM

The PICASO contouring program has been used to produce maps and oblique views for a number of project sites over the last two years. On this evidence, what follows is an evaluation of the program discussed under six headings:

i. data validation

A simple means of checking the raw data for errors derived in the levelling computations or in its inputting at the terminal keyboard is merely to run the program and inspect the product. Visual determination of the signs of errors such as uncharacteristic pyramid-shaped or 'spiked' contours is a much simpler task than scanning long lists of figures. The example given (fig. 8) illustrates the effect of feeding in one spot-height value as 180 instead of 170m. The error is immediately apparent and, once located on the grid, can be rectified.

ii. square grid structure

The format of the data set is predetermined and consequently this directs the user to one of two ways of 'capturing' the spot-height data: to field survey by levelling on a regular rectangular grid or to obtain values from published maps by superimposing a grid and interpolating values at the intersections. The former is desirable since levels recorded are precise, but they do not always coincide with breaks of slope and so do not faithfully represent the surface in detail. The latter method produces a DTM in a shorter time but visual interpolation from the printed contours or spot-heights leads to a degree of inaccuracy that may not be acceptable.

iii. contour aesthetics

A map comprising unsmoothed contours can be very

unappealing to many users and, since one is used to traditional cartographic contouring, at worst the map may be hardly interpretable. Smoothing, however, is not of paramount importance and should be assessed in terms of accuracy and cost. Straight line interpolation between two points is the closest approximation mathematically, and to include subroutines in the program to smooth the contours may not be justified in computer memory or run time costs.

A further problem in smoothing is that it can sometimes lead to contour crossing at, for example, ridge ends where 'pointed' contours might well exist. In other words technical correctness is here surrendered to produce a smooth curve between a set of points.

Consequently the PICASO program can be seen as being perfectly adequate for producing the topographic bases needed in landscape projects. One also should not underrate the graphic expertise of landscape designers in manually improving the map at far less expense. "The initial simple contours are quickly produced by the computer but when the density of information increases, the computer slows down exponentially but the cartographic draftsperson excels at the same rate" (Peucker, 1980).

Perhaps a more serious drawback of the program is the fact that the contours are not labelled. In setting the plotting parameters the user has to state lowest and highest contours, so whilst it is not impossible from this information to determine most of the contour values, minor variations in the surface producing closed contours might be misinterpreted.

iv. scale designation

This is a particularly valuable component in the program insofar as the map can be drawn at virtually any scale, enabling the landscape architect to produce sketch designs at relatively small scales and detail drawings at larger scales.

v. perspective views

The value of these can be seen in three main areas:

a) They present the designer with a third-best approximation of landscape reality; that is, in terms of an awareness of an area's three-dimensional space actually being there cannot be bettered. A second-best option is a physical or hardware model of a site, constructed to scale and showing the terrain accurately. A computer-drawn or hand-drawn perspective, or indeed a photograph, presents a three-dimensional image on a two-dimensional surface. This third-level representation can remind the designer of an area's general configuration and as such is a useful resource in the design process.

b) Perspective views also provide the landscape architect with a base upon which designs can be created, evaluated and modified, either interactively on the screen or in traditional fashion as a series of 'roughs' on paper. An engineering exercise recently set on the Gloucester Landscape Architecture degree course required students to design and locate

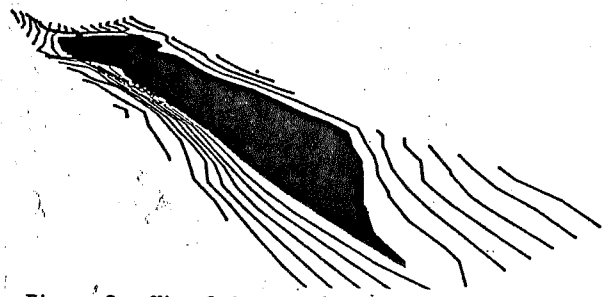


Figure 9 - Visual impact analysis

an embankment dam within a Cotswold valley. Fig. 9 shows a first attempt to ascertain the effect of a given dam siting on reservoir form and the resultant visual impact on the landscape. The water's edge is merely traced from the contour pattern as drawn.

c) Computer photo-montage is a technique much used in architectural studies but so far of limited acceptance and implementation in purely landscape studies. This is to be regretted because it is an admirable method of assessing visual impact. Simply, the coordinates of a feature, for example a power station, are used to produce a computer-generated perspective located accurately on a terrain model, which is then superimposed on a photograph taken from the same viewing point. From such a visualisation one is able to assess precisely the relationship between the structure and the landscape, and, for example, to estimate the dimensions of any screening required, if that is the objective.

The PICASO program allows the superimposition of contour and net perspectives, but to date the application of the three-dimensional viewing routines of geometric forms (i.e. structures) to the contour program has only been partially developed. It is also anticipated that the net perspective will provide a base for the development of hill-shading into the program, which involves the calculation of tonal values of each facet dependent upon solar aspect.

vi. Earth modelling

Linked to the PICASO base data structure though not yet fully interactive are a number of programs that calculate volumes of earth. Designers are able to modify contour patterns and adjust the DTM relatively easily to permit comparisons of cut and fill. Currently being developed in the Computer Unit is a program to illustrate graphically the iterative processes of cut and fill calculations by means of sectional viewing. Again this is an area of some relevance to the work of the landscape architect and it is gratifying to know that the PICASO system has provided an encouraging base for research and development.

CONCLUSION

"Landscape Architects who now use the most modern communication technology, including the use of computers and computer-assisted decision-making", state McCarthy and Portner (1980), "are the forerunners of a major shift in their profession. Their future roles will depend upon this ability to use new techniques, to manage the hardware they require, and to think through the implications of the information revolution now upon us".

A not insignificant step in this direction has been taken at Gloucester in the direct application of computer contouring techniques to landscape design.

Notes

1. PICASO, an acronym for Picture Computer Algorithms Subroutine Orientated.

2. Hard-copy means output on paper, acetate (or other material) as distinct from terminal screen display.

3. In purely landscape views this can be taken as 60^{o}, although if buildings are included an angle of 45^{o} may be recommended (Gill, 1974).

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DEGREE DISSERTATION TITLES

Every landscape degree student at Gloucester presents a dissertation, which gives the opportunity of individual research in a subject of relevance and interest. Below are listed the successful submissions for 1982 and 1983. It is hoped that regular publication of such a list will promote the dissemination of student-motivated research. These documents can be consulted in the College Library and abstracts may be obtained from the Librarian on receipt of a stamped addressed envelope.

1982

BEATTIE, Jessica	Bedding plants in cities
BRANDON-JONES, Elizabeth	Princes Park, Liverpool: the future management of a Victorian inner-city park
DENT, Caroline	Sculpture outdoors, the site and the public: the past, the present and the future?
DICKER, Evelyn A.	Lighting the urban environment
EVANS, Alison M.	The Thames Walk: new alternatives for long-distance footpaths
GERRARD, Amanda J.	Rural archaeology: an investigation into the effects of modern agricultural operations upon archaeological remains, and their future preservation
GORDON, Richard A.	Farm buildings in the landscape: a proposal for a revised development-control system involving landscape architects
GREGORY, Mark A.	Designing for the handicapped: the landscape architect's contribution to integrating the handicapped through design
HOLLAND, Catherine R.	Unconventional urban planting: the reaction of the general public to unconventional urban planting in British Industrial City Parks
HUTCHINSON, V. Joy	Urban public open-space planting: an investigation into the plant choice made by landscape architects for areas of urban public open-space in the United Kingdom
OSBORN, Charlotte J.	New wetland nature reserves and the conflicts with recreation: the design and management of new man-made wetland nature reserves to provide for the protection of wild-life against the potential threats posed by recreation

PERRIMAN, Stephen R.	Holidays in Eden: a discussion of the metaphysical principles of the garden in relation to the educational basis of garden design
POTTERTON, Charles W.S.	The future of the elm: a study of disease control and replanting techniques
SAMUEL, David J.	The new universities: a critical evaluation of new university design concepts
SOUTHGATE, David E.	Peak District reservoired valleys: a case for regional multiple recreational use of a reservoired valley complex
STEVENSON, Anne E.	Roof tops: an examination of the potential of roof-space for the aesthetic enhancement of urban life, the relief of pressure on dwindling land resources, and the provision of open green spaces for pleasure, recreation and ecological redress
TERRY, Jacqueline	Interior landscaping in public buildings: the role for the landscape architect in the British Isles
WILKINSON, Christopher J.	Concurrent landscaping: the concurrent landscaping of aggregate workings - a worthwhile proposition?
YOUNG, Yvonne M.	School grounds: a study of the unrealised potential

1983

ARRAND, Dorothea	Briefing: its relevance for today's public open space - a study of Thamesmead
AWANG, Ramali Bin	Regional land development schemes: some problems and consequences arising from large scale forest clearing for agricultural development - the Malaysian experience
CORRIE, Peter A.	The agricultural estate: its past, present and future contribution to the rural landscape
EVANS, David M.	Childs play: the design of unsupervised playgrounds in urban Britain, and the search for new initiatives
FUSSELL, Louise M.	Garden exhibitions: the history and influence of the German National Garden Show, and the first international Garden Festival at Liverpool 1984
GRAHAM Kristi	Symbolic meaning in the built environment: its importance in the design of central places
ILLMAN, Susan E.	Time and change: the forgotten art of landscape design
KRELLE, Linda	Computers and Design: computers as an aid to landscape design
LANGER, Graham P.	Blaenau Ffestiniog: the role of a National Park in protecting industrial landscapes
LINCOLN, Vanessa I.	Victorian public parks: their past, present and future role in urban recreation

LUMB, Elizabeth M.	School grounds: an educational resource - an identification of the increasing awareness in the educational system of the value of school grounds for teaching purposes, and the important contribution of the landscape architect in this move
SCOTT, John	Environmental education: a role for the landscape architect by example of the project opportunities on the urban fringe
STERRY, Hannah C.	Therapy gardens: a study of past failures and recommendations for future success
SWINDELLS, Christine D.	Communication between the arts and landscape design: a study of the development and formation of their present relationship; assessment of the present extent of communications and future potential
TOMBS, Elizabeth M.	Protection of historic gardens: the role listing can play
TURNER, Elizabeth J.	Onshore oilfields: the environmental implications of the development
WALTERS, Guy B.A.	Landscape of military training: a study of the use of army training areas and possible solutions to the conflicts between civilian and military land-use
WEYMOUTH, Russell N.	Green belts and recreation: a study of the problems, opportunities and implications of a recreational role for green belts

REVIEWS

CREATIVE LANDSCAPES OF THE BRITISH ISLES: WRITERS, PAINTERS AND COMPOSERS AND THEIR INSPIRATIONS by Bernard Price, Ebury Press, 1983, 192p, £12.95

MUSICAL LANDSCAPES by John Burke, Webb & Bower, 1983, 208p, £10.95

PROGRAMME NOTES at concerts or catalogues at exhibitions have more than a temporary purpose: such reading is not merely to provide diversion in the dull music, or substance amongst the abstractions. For frequently it is only by knowing something of the background to a work, or learning the circumstance of its inspiration, that a full understanding of its significance is possible.

There have always been books telling of the artist's life and indeed much has been written on the theme 'This is where they lived'. But in recent years the emphasis has shifted. Perhaps it began with Margaret Drabble's A Writer's Britain, 1979 or even with Edward Thomas's A Literary Pilgrim in England, 1917. Be that as it may, the interest now is on the landscape that gave the urge; the associations that brought out the best; the setting that stirred the muse.

One such book which typifies this fasion is Bernard Price's Creative Landscapes of the British Isles. In it we are given a catalogue of names grouped by broad regional divisions. Thus, Betjeman and Blackmore share the south west with Holst and W.H. Hudson; Borrow and Britten rub shoulders with Gainsborough and Henry Williamson in East Anglia; while the central region as it is termed embraces H.E. Bates, Elgar, Laurie Lee, Shaw, Flora Thompson and Joseph Wright et al.. Inevitably all are treated sketchily and it is not always apparent just what part the landscape played in the act of creation. But the photographs are interesting, even if predictable; though the inclusion of paintings is unnecessary.

Another publication, John Burke's Musical Landscapes, might appear to mine a narrower vein. It admittedly has relaxed the gazetteer approach

somewhat, for the chapter titles include 'Folk and Gentlefolk', 'The Northern Drift', 'Cockaigne', even 'Land of Heart's Desire'. Still it is readable, as well as informative, and the colour photos are excellent. Anecdote or gratuitous information can become tedious, only outdone by naive criticism. Mercifully Burke restrains himself, though at times we long for less of the biographical and more of the topographical.

However, both of these books are worth reading, or at least dipping into. Whether an outlay of some £11 to £13 is justified for each might depend on territorial allegiances. Perhaps compiling one's own anthology of landscape might be more rewarding.

A. Sampson

AGRICULTURE, THE COUNTRYSIDE AND LAND USE: AN ECONOMIC CRITIQUE by John Bowers and Paul Cheshire, Methuen & Co, 1983, xii + 170 pages unpriced

IN THE FACE of a number of recent polemical tracts on the impact of agricultural policy on the rural landscape (notably by Shoard, Norton-Taylor and Body), it is refreshing and indeed important to have a more systematic analysis of this impact, based on marginal utility economics.

Bowers and Cheshire stood alone in 1969 when they wrote an article in the New Scientist attacking agricultural policy's absurdly high and economically inefficient levels of subsidy in terms of their detrimental impact on the rural landscape. They received much abuse for such an attitude then; but fifteen years on, public attitudes have changed and their arguments have become more fully developed.

The first four chapters of this book document exactly which agricultural policies since World War II have had what type of impact on the landscape. The reasons why such policies came about are considered and their economic inappropriateness is assessed. A case study in Berkshire (chosen for its ordinariness) is used to illustrate a number of these landscape effects and policy repercussions.

Chapter 5 dissects the economic logic of the Common Agricultural Policy, and chapter 6 looks in a little more technical detail at

some of the ways in which economic nonsense can be hidden in policy terms by discussing exactly what agricultural efficiency does and does not mean. Chapter 7 considers systematically the objectives of agricultural policy and again presents economic arguments for why they have not been achieved.

By the concluding chapter, three stark facts about agricultural policy are apparent: it is ludicrously expensive; it is destroying the rural landscape; and it is not fulfilling its objectives. In being prescriptive, the importance of an economic approach in the book to issues of agriculture and the landscape becomes apparent. It is clear that innovations such as planning controls over agriculture, management agreements and so on make about as much sense as agricultural policy itself. This is simply because it adds to economic inefficiency by overlaying a further tier of (expensive) administration and policy on to one that already costs too much. The only real solution to landscape deterioration in the countryside, of course, is to change the policies that are causing it.

Since these policies are economic ones, then changes in them must also have their basis in economics. This is why an understanding of economics is crucial to the development of a rationale for rural landscape conservation, a point reinforced by the Landscape Institute itself in recent representations to the House of Lords[1], concerning fiscal incentives for conservation.

In terms of policy options then, reductions in subsidies on capital, the change of headage payments to direct income transfers and above all substantial revisions in price support policy - all economic measures - are required. This will allow farmers a degree of rural custodianship hitherto made impossible by policies hell bent on producing surpluses in most temperate food products, whilst at the same time, degrading the landscape of the countryside. Surely, the prospect of undertaking sensitive landscape management in the Lake District must have more inherent appeal than in the butter mountains and wine lakes of Europe.

Nigel Curry

Notes

1. The Landscape Institute, Evidence Presented by The Landscape Institute to the House of Lords Select Committee: sub-committee on Agriculture and The Environment, January 1984, 12 Carlton House Terrace, London

MAN AND THE NATURAL WORLD: CHANGING ATTITUDES IN ENGLAND 1500-1800 by Keith Thomas, Allen Lane, 1983, 425 pages, £14.95

THE EVIDENCE may not be entirely for Robert Bridges's assertion[1] that:

> Man's happiness, his flaunting honey'd flower of soul,
> is his loving response to the wealth of Nature.

At least, following the several close threads through Keith Thomas's Man and the natural world suggests that Bridges may have told a poetic truth but not a scientific or historic one.

Thomas's minutely detailed and referenced survey, subtitled, to show that the Englishman's loving response is not necessarily universal starts with a "human ascendancy" based conventionally on a Judaeo-Christian foundation, and examines the changing understanding of man's place in the scheme of things (woman's place always having been considered a little different: this, of course, is one of the "Vulgar errors").

As background reading for anyone interested in attitudes to the living environment, Thomas's mining of Plato and Trevelyan and most writers inbetween is a splendid comparison and supplement to both Man's responsibility for Nature[2] and The naturalist in Britain[3]. "Nature" through the central chapters of the book, "Men and animals" and "Compassion for the brute creation", refers largely to domesticated animals and the less elevated members of our own species. The later part, "Trees and flowers" and "The human dilemma", is of more direct interest to the landscape architect. The gist of this story will be familiar: "Just as animals were in the Early Modern period viewed by many with increasing sympathy, so trees and flowers steadily acquired a new emotional importance", as wildwood retreated and was at last tamed. Soon, tree planting was necessary, to make up for the retreat. Soon, decoration - floral embellishment -

became sensible: there was even the passing eighteenth century episode of the ferme ornée ("ornamented farm"[4]). The rest is the well known history of "landscaping". And the modern dilemmas of cultivation-or-wilderness, town-or-country, meat-or-mercy (towards eating good animals). It is the wealth of detail which makes reading this story here so valuable.

Thomas, a historian, has written a history without final interpretation or analysis. It is difficult to know what 'message' the book conveys, other than that scientific understanding and historical perspective are indispensable as means by which our relationships with the rest of nature can improve. Whether or not they will improve is not examined; and on the basis of this history is unexaminable. Yet, perhaps the clearest message I received from reading the book is that Thomas has a rather saddening story to tell - a sadness not from reading the minutiae of the post-mediaeval inheritance of mediaeval attitudes, but from sensing that many of our own attitudes will, with similar hindsight, appear somewhat mediaeval, too.

Martin Spray

Notes

1. Testament of Beauty, 1929.
2. John Passmore (2nd ed. 1980) Man's responsibility for Nature - Ecological problems and western traditions, Duckworth.
3. David Elliston Allen (1976) The Naturalist in Britain. A social history, Allen Lane.
4. See R.W. King (1974) The Ferme Ornée Garden History 2(3): 27-60.

The School of Landscape Architecture
Gloucestershire College of Arts & Technology

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LANDSCAPE ISSUES

LANDSCAPE ISSUES

Volume 1, Number 2, November 1984

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A MILESTONE FOR LANDSCAPE ARCHITECTURE

By most accounts in the press, on television and on radio the first International Garden Festival in this country has been a success. It comes therefore as some surprise to register the degree of criticism levelled at it by a considerable number of landscape architects.

One specific area that has been singled out regards the standard of implementation and maintenance of several designs on exhibition. Certainly one can appreciate the variety of constraints imposed upon the organisers, not least the matters of budgeting, meeting deadlines and scale of operation, which may have resulted in some schemes not fully realised nor adequately tended. This I do not deny, but are the criticisms being unnecessarily inflated thus leaving unapplauded the many worthy achievements in both detail design and overall planning?

It is easy to over-react to criticism. As teachers, we know only too well the way some students respond to our negative remarks on their work, no matter how well intentioned. So long as the objective is to learn from mistakes and recommend future courses of action then criticism is surely valid. One would hope this is how the Liverpool post-mortem is applied.

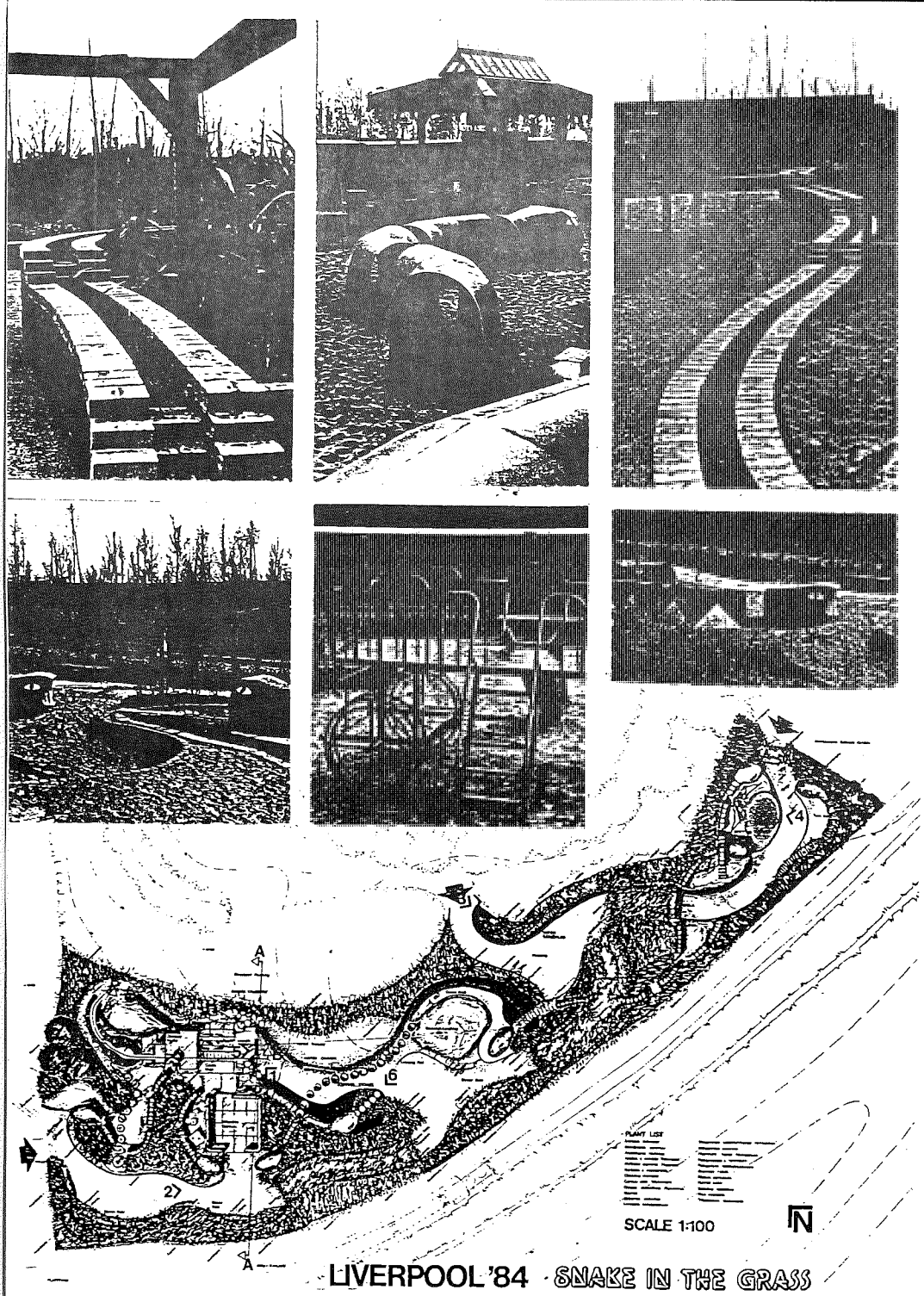
Having been the first in this country, the Liverpool Festival has not benefitted from a tradition of garden shows, so it hardly seems fair to make uncomplimentary comparisons with those that our West European neighbours obviously mount so competently. These would no doubt confirm that a top class garden show is achievable when one has the experience that is based upon such a tradition; but let us not forget the reality of Liverpool: the final effect conceals

the major achievement of providing a foundation for a landscape spectacle upon a site of severely degraded land within the incredibly short space of two and a half years.

Unfortunately, this mammoth task suffered some extreme weather conditions: the months prior to the opening were wet and quagmires hindered plant establishment; the unprecedented summer drought which followed did not improve matters horticulturally, even though ironically it boosted the Festival's popularity. At close on three and a half million visitors, the feasibility study target was passed and with its widespread media coverage throughout the summer, in simple but valuable P.R. terms, the Festival surely marks a milestone for the landscape profession in this country.

The future of the site however appears uncertain. A permanent garden feature to commemorate the event is undoubtedly desirable, but much of the site is scheduled for housing and light industry. Already several structures have been dismantled and much plant material has been removed or transferred within the site. The Liverpool City Council has stated that it will take over the responsibility for converting the Festival Hall into a sports complex and for maintaining the arena and about 18 hectares of parkland. This comprises the lake and some international gardens including those from China, India and Japan, donated to the people of Liverpool.

One might, with reason, question the feasibility of this undertaking when one considers that South Liverpool already possesses a sufficient number of public parks. However, it is difficult to envisage a better use of the Festival leftovers and it would be quite regrettable if the whole site was turned exclusively to uses such as industry or housing on merely economic grounds, in view of the well-publicised financial priorities of the Council. It is important to remember that, had it not been for the staging of the Festival, there is every possibility that the 100 hectare riverside eyesore of dockland dereliction, storage tanks and rubbish tips would have remained as such for years to come.



What is certain is that the Garden Festival concept in this country is now established. The Stoke-on-Trent Festival is well on course for 1986 and it has recently been announced that Glasgow and Gateshead are to be the sites where the 1988 and 1990 events are to be staged. Indeed, in the words of Basil Bean, Chief Executive of the Merseyside Development Corporation, garden festivals will be very much a part of "the pattern of our life in the future".

* * * *

The School of Landscape Architecture, Gloucester, was involved in the design and implementation of a number of gardens, displays and demonstrations during the running of the Liverpool Festival.

Of particular note was the First Prize winning entry in a student design competition for a children's play garden: "Snake in the Grass" designed by Mark Gregory and Alison Evans (see illustrations). In spite of implementation problems, that garden was also awarded a certificate of merit at the closing ceremony of the Festival in October. Past and present students were also involved in the Witches' Garden, the Liverpool Quiz Garden and Gardens for the Disabled.

During the first week in July a plant selection computer program (described fully in this issue) was successfully demonstrated in the Festival Hall, a program developed by the School in collaboration with Pershore College of Horticulture. The Pershore College stand, of which this demonstration was a part, won the gold medal for the best educational display.

Acknowledgements

To publish a new periodical from a small School base needs as much help from the production staff as from the contributors of articles, reviews, etc. I should therefore like to thank in particular the following people: Lyn Johnstone, Moira Garrigan and Angela Norman for the general administration, typing and collation, Jill Steeves-Booker for the cover design and Aylwin Sampson for the layout and paste-up.

R.J. Moore

LANDSCAPE MANAGEMENT : A NEW PROFESSION?

G.W. Hyden

THE LANDSCAPE Institute was formed in 1978 by the expansion of the former Institute of Landscape Architects. To the single discipline, Landscape Architecture, was added two new divisions, designated Landscape Science and Landscape Management.

Expansion of the existing Institute's sphere of influence was intended to attract individuals operating on or about its fringes. The process can be envisaged as one of nucleation, the centre being formed by the existing structure. The free units, being attracted, represent unaligned practitioners of professional status, involved in 'landscape' work.

LANDSCAPE MANAGEMENT

It is important to understand the basis upon which Landscape Management came to be defined as one of the 'divisions' of the newly expanded Landscape Institute. The role of the Landscape Architect, as represented by the earlier organisation, was concerned with development, innovation and radical changes in the landscape. The professional model used by landscape architects was without question that of the architect. To plan, design and implement were the three major phases of his work and once the design was established the landscape architect moved on to the next commission. Just like an architect! But unlike

* *Gordon Hyden is Head of the School of Landscape Architecture, Gloucestershire College of Arts & Technology.*

buildings, which occasionally need maintaining to retain the 'status quo' the landscape keeps on 'growing'.

The scale of the work and the fact that the clients were seldom private owners who could take over the finished work themselves, meant there was a need for an organisation or individual to take over care of the site. In towns this may have been the local Parks Department or, in the work related to housing, the Housing Management Department. In the larger areas of the countryside, particularly the designated areas of 'Country Parks', areas of 'Special Scientific Interest' and the 'National Parks' very specialised groups began to emerge whose responsibility was to respond and react to the everchanging landscape in a sensitive and sympathetic way. Many landscape architects were aware of this role and in some ways would have been able to carry out the work quite adequately themselves. It was not, however, natural for them to stay with a site for what could be the whole of their professional lives; as has been said they tend to design for change, then move on. What was needed and the role that was emerging was that of Landscape Manager.

Wright and Parker (1979) provide a definition of Landscape Management which a 'group of professionals' had evolved. This description saw the role of the 'profession' to be ensuring that the long-term objectives of both designers and users of a landscape are achieved, so that the landscape will evolve and mature to their satisfaction. It is notable that the wording of this definition is couched in terms which imply an overt concern with the 'designed' quality of the landscape and an emphasis on visual qualities which are the preoccupation of the landscape architect as designer. It is in one sentence of their definition that the essence of the profession is revealed:

> Landscape Management concerns both the use of the land and the growth of physically and visually acceptable relationships between the land and its living communities ....

In a pamphlet 'The Landscape Institute and the Professions it Serves' (1981) each of the 'three groups of professional landscape practitioners' is briefly described. The section dealing exclusively with Landscape Managers is as follows:

> Landscape Managers use their detailed understanding of plants and the natural environment to advise on the long term care and development of the changing landscape. This involves them in the financial and physical organisation of manpower, machinery and materials. They also have to consider statutory measures such as planning laws and grant aid schemes, in order to preserve and enhance the quality of the landscape. Landscape Managers usually have a degree in horticulture, forestry or agriculture together with further training in land management or other related disciplines.

'Recreation Land Management' by Miles and Seabrooke (1977) concerns itself with the practical application of management techniques to the controlled use of rural resources in relation to recreation in the countryside. For the most part their book concentrates on specific and directly applicable techniques. However before citing the particular they do look at the wider management function in this context. They regard the process of management as

> Arising and developing in a similar manner for all enterprises:
>
> i. by the determination of goals or objectives, leading on to
>
> ii. the preparation of a broad policy for achieving those objectives, and thus to
>
> iii. policy formulation and the translation of policy into plans and programmes of operation.
>
> The manager, then, has the responsibility of exercising direction and control over the implementation of his plans and the co-ordination of the resources at his disposal. Thereafter, monitoring, controlling and reviewing are continuing elements in maintaining the operation of management.

The role and relationship of 'owners' is regarded as of paramount importance by Miles and Seabrooke and they go on to discuss this at length. As they point out, under the English system of land tenure the owner of the freehold interest in land generally has, unless he has willingly assigned his rights to others, the ultimate power of use of that land. Total freedom may be restricted by legislation, but ultimately positive land-use control is in the hands of the owner. It is clear that in the working situation this aspect of Land and Landscape Management imposes itself heavily on the working practices of the professions.

Two other groups are added to the 'owners' by Miles and Seabrooke to form an organisational model, which they present as follows:

> In its guise as an organisation, 'management' may be seen as the nucleus of the system relating property-owners, workers and consumers. The links involved may be termed the fundamental relations of management.

Management roles

The functions of a Landscape Manager are multi-faceted and at this stage of development of the profession still imprecisely defined. The use of the word Landscape rather than Land or Countryside or Land-use implies certain priorities. It is however the choice of the word Management which opens up most possibilities and perhaps could lead to most confusion. Not because the word Management is too precise, quite the opposite, it can have a number of meanings although many people imply an understanding of 'management' which was overly precise and which results in the conceptual image of the Landscape Manager as being too specifically task orientated or too narrow in the use of methods and areas of concern. A very specific area of confusion occurs because of the indiscriminate use of the word Maintenance as an interchangeable alternative.

To dispose of this problem, maintenance is concerned only with 'keeping a thing in repair'. In landscape terms it will generally

consist of limited operations which have been contrived to retain a specific situation or to bring it to fruition. Processes such as pruning, grass cutting, weeding, cleaning and repairing are all maintenance operations. Whilst they may be carried out in accordance with schedules and plans they go no further. Maintenance may nontheless form an integral part of a 'Management' programme. But in this case where the management is concerned with horticultural or construction work, the role of the Landscape Manager is much more than that of maintenance.

There are four areas which the Landscape Manager may have to manipulate, control or deal with in one way or another. They are:

i. Horticultural management
This is the 'gardener' role. The areas may be very large, but the material and purpose will be 'man'-orientated. Trees, shrubs, flowers, lawns and sports areas will all be subject to his watchful eye. As mentioned earlier maintenance schedules will form an important day to day part of this system. Horticulture, landform and simple construction will form the 'knowledge' base of this work. Familiarity with implements and machinery, their use and consequences will also be necessary.

ii. Ecological management
The no-action type of management which leaves nature alone to determine development. This may sound reasonable but it cannot work, not in a densely populated country anyway, or for that matter in a world where access will be necessary and some help for nature is often vital if an area is to be conserved.

I once attended a lecture given by an eminent Belgian forester who described his role as that of 'a conductor of a symbiotic orchestra'. I think that description fits this part of the Landscape Manager's work perfectly.

iii. Contract management
When major changes are implemented, the process will inevitably lead to work much of which may be the subject of contracts. The carrying out of projects by the use of contractors is a special and complex field. Knowledge of contract law and its enforcement is required together with the skill and abilities necessary to draw up, or have drawn up, a comprehensive set of contract documents. In this area I would include all aspects of office procedures and the financial management of development work, be it contract payments or costing and control of direct labour work.

iv. Personnel management
The inter-personal skills required of a good 'man'-manager are highly prized. Things will go smoothly and work will be done when it is carried out with skill and understanding. But labour relations can go wrong and if these are not handled with such skill the consequences can be disastrous. Knowing about a person's job is important in understanding him. To know when circumstances or abilities are being stretched beyond their limits is gained only by experience. But experience of dealing with skilled men and appreciating and respecting their exclusive areas of competence needs training, skill and experience.

It can be seen then that the Landscape Manager is more than 'one who husbands the land', or, to use another of the many alternative definitions of the word manages, i.e.'takes charge of'. He must be skilled in all four areas of management if he is to be able to function in the complete range of expected roles.

An Emerging Profession

In Landscape Management we can observe the emergence of a new 'profession'. Its conception took place within another established profession - that of Landscape Architecture. Under circumstances described by other researchers into emergent professions, the process of professionalisation normally comes from the occupants of the aspiring community. The situation which Bucher and Strauss (1961) concentrate upon in their paper 'Professions in Process' is that of groupings emerging within professions. They call these groupings 'segments'. They regard specialist groups as being major segments; however even these specialities will contain segments. If they did have a common definition along all lines of professional identity, it was, they say, probably at a very special and early period in their development.

This normal expectation, that the new segment will emerge from some sub-specialism of the parent profession, is not the case in this study. The new 'profession' is created by a process of attraction. The process requires the new profession to accept the professional ethics and codes of conduct devised by the parent body. Nowhere can I find reference to the process involved in the expansion which has led to Landscape Management becoming a newly created part of the expanded Landscape Institute. The new profession will have to accept the socialisation restraints of the established one until the internal strength, and will, have matured. Moore (1970) described professional socialisation as follows:

> Acquiring the requisite knowledge and skills and also the sense of occupational norms typical of the fully qualified practitioners.

One must be constantly aware, if, as I believe, Landscape Management is a profession in its own right, that for the time being the dominant influences on the socialisation process are coming from another professional sphere. It will be landscape architects who will take the lead in defining the 'occupational norms' and who will provide the images of 'the fully qualified practitioners'.

As far as organisation is concerned the Landscape Institute has provided a ready-made organisational structure onto which the specific needs of this profession are being grafted. From this beginning Landscape Management needs to concentrate on its organisational development, presumably through the Landscape Institute and so is tied to membership recruitment. The members of this division, albeit few in number, must promote their professional organisation in order to strengthen their position in relation to the dominant landscape architectural membership.

The other component of development which must be concentrated upon is Education. The systems which exist at the moment are dependent upon reasonably appropriate educational courses being combined or enhanced to produce a concoction which will cover enough of the requirements to satisfy the existing practitioners. Landscape Managers are to some extent aiming to catch up with the Landscape Architecture division. The earliest members of the Management division were, like the first members of the ILA, 'invited' to join. They were to form the cadre of the new profession. It was by their image that future membership would be measured. Only a handful of such invited members were allowed before they themselves had to form the nucleus of an 'Admissions Assessment Panel'. This panel is made up of Landscape Managers and Landscape Architects in equal numbers. Its role is to receive applications and assess the appropriateness

of their educational background and the experience they have. Should these 'add up' to a satisfactory total the applicant is allowed to become a 'graduate member' of the Institute. If, or when, the requisite professional practice requirements have been satisfied the graduate may take an oral professional entry examination. This examination requires candidates to be able to answer questions on their professional practice experience and their understanding of professional and office procedures. The overall content of this examination is the same for all three divisions of the Institute, with such variations as are necessary in terms of specific professional experience.

Access by Education

The Landscape Institute guide-lines on access to the profession to the Landscape Management division contain a note which in the context of this study is the most important. It recognises the dynamics of the situation, produced when the new dimensions of the Landscape Institute were created:

> Note that it is not possible to reach graduate membership solely on the basis of an undergraduate degree course. This does not preclude the award of 8 points to an undergraduate course designed specifically for a professional career in .... landscape management. Such a development in the future would need to be evaluated and recognised by the Institute.

This 'note' highlights the Landscape Institute's position in relation to the development of appropriate under-graduate education for Landscape Managers.

Reports by Chairmen of the Education Committee and Admissions Assessment Panel make it clear that the existing methods of entry are not allowing or encouraging enough prospective members from the Landscape Management sector. Either the potential members are not attracted to the Institute (a problem for the Public Relations organisation of the Institute) or the entrance procedures are inhibiting applicants. It is my view that the present system is too complex and probably hyper-selective.

The prospect of setting up an External Examinations system would be seen as anathema to most members. The present external examination for landscape architects is too expensive and leads to a great deal of acrimony. Whilst at present, not wishing to suggest the Assessment Panel should be disbanded, I do believe there is a need to provide a means of entry into the profession through full-time courses, specifically recognised to provide such entry. What is more, several courses are needed if reasonable numbers of graduates are to be produced. Numbers in the order of 50/100 graduates annually must be considered if the Landscape Management division of the Institute is to be more than an ineffective 'segment' of what is still in reality an Institute of Landscape Architects. This major 'break-out' will also be necessary if the Landscape Managers are to be recognised as having reached professional status in their own right. Managers cannot expect to make any real headway as a profession until, as Larson (1977) puts it, they 'produce the producers', that is educate specifically for their own profession and cease taking ready made (albeit customised) products from other systems. In characterising a professional community Goode (1957) includes the following statement:

> Though it does not produce the next generation biologically, it does so socially, through its control over the selection of professional trainees, and through its training processes, it sends these recruits through an adult socialisation process.

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PLANTFILE : A SYSTEM OF PLANT SELECTION AND ITS COMPUTER APPLICATION

R. Sidwell

The conspectus used in this scheme is based on an attempt to analyse the design elements of a plant. It is thus primarily visual. Some supplementary factors such as soil texture, pH and growth rate relate to habitat and management and are secondary to the main object of the scheme.

Plants can be classified under many systems. The taxonomic botanist will classify plants according to their probable relationships. It is sometimes tempting to use taxonomic groupings in planting design. Grasses, ferns and conifers are some examples which come readily to mind. The typical representatives of these groups seem to be clearly defined but further study reveals many anomalies. Many 'grassy' plants are not grasses. The hart's-tongue fern is, from the design point of view, more like an evergreen version of a Hosta than the conventional 'fern'. And the popular inclusion of Ginkgo biloba in the conifers raises problems.

In the system here proposed plants with similar visual characteristics will be grouped together regardless of their taxonomic relationships.

* *Ronald Sidwell, formerly visiting lecturer at Kew and vice-principal of Pershore College of Horticulture, now divides his time between lecturing in planting design and plant history, and tending his Bredon Springs garden, Worcestershire, which he has developed over 36 years and is open under the National Gardens Scheme.*

LIFE FORM

The groupings under this heading follow popular botanical and horticultural usage. There are five main divisions and each is subdivided into various heights.

Trees This is a well understood group. Trees have one of few main trunks. Most of the new growth will be from the upper parts, usually from the periphery. Three heights are recognised: Tall - over 18m, Medium - 10-18m, Small - under 10m.

Shrubs These comprise all the remaining woody plants with annual rings of growth. Typically there is no main trunk and new basal shoots frequently arise. Nevertheless in some cases most of the new growth is peripheral (e.g. Cotoneaster). In some cases (e.g. Leycesteria) the shoots live only a few years and are continually replaced by renewal growth from the base.

The monocotyledons with secondary thickening (e.g. Yucca, Cordyline) are a somewhat anomalous group that belong here and Trachycarpus is included because it has nowhere else to go.

Shrubs are: Large - over 3m, Medium - 1.5-3m, Small - 0.5-1.5m, Dwarf - under 0.5m.

Non-Woody The difficulty with these plants is in selecting terms which are acceptable to all workers. Botanists would include most of these under Chamaephytes, Hemicryptophytes and Geophytes with a few stray specimens finding location elsewhere.

The term 'Herbaceous' has been retained in its popular gardening sense for those perennials which die down to ground level at the end of their growing season. Some such as paeony and Hosta die off completely, leaving only dormant buds at soil level. Others will retain a few basal leaves (e.g. Aster). Some, such as Kniphofia, have only basal leaves, and these are retained during normal winters but they are best included here.

Herbaceous perennials are: Tall - over 1.5m, Medium - 0.5- 1.5m, Low - 0.2-0.5m, Dwarf - under 0.2m.

'Sub-shrub' is an old gardener's term to describe those plants which do not die back in winter yet can hardly be described as woody. Typical of this group are Alyssum saxatile, Arabis albida and Dianthus. Many plants popularly known as rock plants or 'alpines' belong here. Heights are: Tall - over 0.5m, Medium - 0.5-1.5m, Low - 0.2-0.5m, Dwarf - under 0.2m.

Monocarpic plants are those which die after flowering and rely on seed for their continued existence. These will usually be annuals or biennials.

Some biennials (e.g. Digitalis, Verbascum, Dipsacus, Oenothera) are valuable subjects in landscape schemes when allowed to naturalise freely. Height scale is as for herbaceous perennials.

Climbers may be shrubs, herbaceous perennials or annuals. A few climbing shrubs are self-clinging to smooth surfaces (e.g. Hedera spp., Parthenocissus tricuspidata). Some climb by twining stems, (e.g. Lonicera spp., Ipomea purpurea); some by tendrils (e.g. Vitis spp., Passiflora coerulea) and some by their petioles (e.g. Clematis spp., Tropaeolum spp.). Many plants commonly called climbers are really sprawlers (e.g. Climbing roses, Jasminum nudiflorum). Climbers are noted under the appropriate life form.

FORM

This is the form presented by the general outline of the plant. Tree form will be greatly modified by density of planting. Ideally tree form is that presented by a tree with unlimited room to grow and with no removal of lower branches.

The forms recognised are conical, rounded, columnar, ovoid, ellipsoid or obovoid, tabular (Fig. 1)

FOLIAGE

This may be evergreen or deciduous, and colour is specified if not green.

OUTLINE

This applies mainly to trees and shrubs. A value rating of 1 - 5 is used. A smooth, even outline is rated as 1. A strongly broken outline is 5. (Fig. 1)

TEXTURE

This term is used differently by different people. In this scheme it covers the size of units making up the plant. It is wholly visual. A rating of 1 - 5 is again used. Rating 1 would include ericas; rating 5 Rhus typhina (Fig. 1).

DENSITY

This requires no explanation. Ratings of 1-5 are given according to the amout of sky one can see through the canopy. 1 is very open, 5 very dense (Fig. 1).

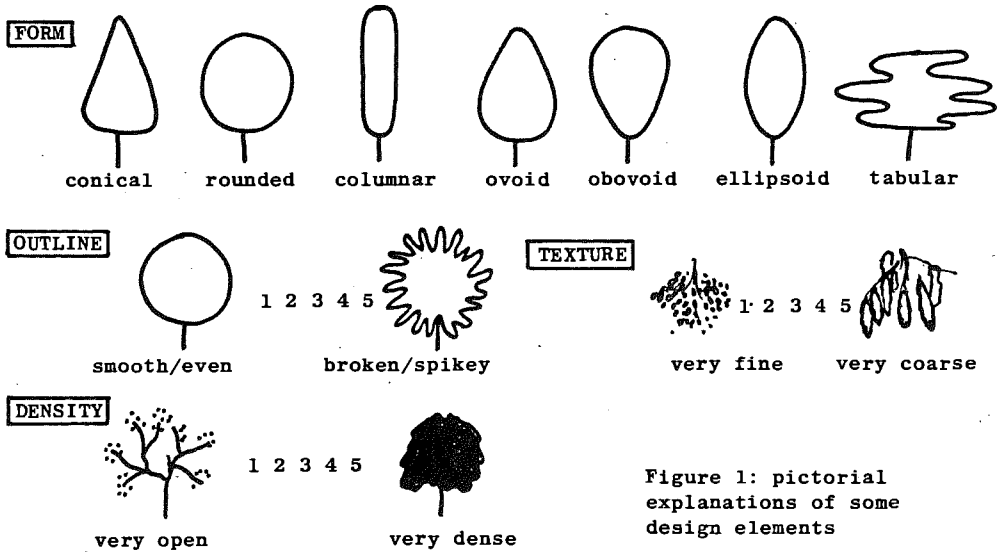

Figure 1: pictorial explanations of some design elements

SEASONAL CHANGE

Another obvious characteristic. An evergreen with no significant flowers or fruit is rated 1. Deciduous trees and shrubs with flowers, fruit and autumn colour are 5.

FOLIAGE, FLOWER, FRUIT

This is an elaboration of Seasonal Change. The season of the year when the feature is of especial significance is shown, e.g. early summer, midsummer, late summer.

FLOWER COLOUR, FRUIT COLOUR

These are self explanatory

FOLIAGE SURFACE

This may be matt, glossy or hairy.

SHOOTS/BARK

When this is a significant feature it is indicated by X, and the season of the year if applicable is shown.

SCENT

This is shown as Flowers or Foliage.

HARDINESS

This is used in the usual horticultural sense. Hardy means that it will survive normal winters over most of Britain. Mod. Hardy - will survive mild winters in most places and normal winters in favoured situations. Tender will only survive in very mild winters in the most favoured situations.

GROWTH CHARACTERISTIC

This is of some significance and is not covered by any of the foregoing headings. Growth may be upright, spreading or pendulous.

GROWTH RATE

This may be rapid, moderate or slow.

LATERAL SPREAD

This applies only to low ground cover plants and is also rapid, moderate or slow.

MOISTURE

Moisture range may be dry, normal free-drained, impeded or wet drainage, or water.

SOIL TYPE

The entries under this heading are sand, medium and clay textures, or any combination of these.

SOIL pH

Here we have acid, neutral, alkaline or any combination.

LIGHT

Sun, moderate shade and shade are noted.

Under the last four headings both tolerance range and the specific preference of the respective habitats by the plants are indicated.

* * *

COMPUTER APPLICATION : a supplementary note from the Editor

The scheme of plant selection described above has been married to 'CARDBOX', an information retrieval system available for most micro-computers. The plant data determined according to the scheme are stored in 26 'fields' on 'record cards', one for each plant. The CARDBOX program allows fast retrieval of these records by means of selection commands referred to the whole record or specific fields, and by specifying the selection criteria in terms of words or values or ranges of numbers which have been indexed on the records. The search criteria can be applied one after another in order to gradually narrow down the selection to the required short-list. (26 levels of selection are theoretically possible). Once this is obtained a list of names or the complete record cards of the plants can be copied to the printer.

For example, a selection of small tree, deciduous, ovoid form and very coarse texture may indicate 25 such records existing. If this is too many to assimilate the user can further select on, say, habitat factors: free drainage, clay soil and moderate shade, to narrow down the list, or he may wish to print a 'hard copy' of the 25 records to study the details in association with standard references and/or photographs. Figure 2 is an example of a print-out of one record . The screen display would be identical to this , except for the fact that the key or indexed words or values would be projected in reverse video.

The program will run on micro-computers with a CP/M, PC-DOS or MS-DOS operating system (16 bit). Ultimately it is intended to make the database 'PLANTFILE' commercially available once the few hundred items already entered on file are increased to a thousand plus. Any enquiries concerning the purchase of the computer package should be addressed to R.J. Moore, School of Landscape Architecture, Gloucestershire College of Arts & Technology, Oxstalls Lane, Gloucester GL2 9HW.

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PLANTFILE  a "Cardbox" database by GlosCAT/Pershore College  (C) R.Sidwell 1984
-------------------------------------------------------------------------------
name CORNUS SANGUINEA              CORNACEAE        COMMON DOGWOOD

lifeform LARGE SHRUB                                          form ROUNDED
foliage DECIDUOUS        outline 3         texture 3          density 2

seasonal change 3        foliage AUTUMN    flower SUMMER      fruit AUTUMN
foliage colour RED           flower colour WHITE              fruit colour BLACK
foliage surface MATT         shoots/bark X WINTER             scent FLOWERS

hardiness HARDY    growth-char SPREADING growth-rate MODERATE  lat-spread
moisture FREE      soil type SAND MED CLAY pH ACID NEUT ALK light MOD SUN

remarks AUTUMN FOLIAGE COLOUR CHIEF ATTRACTION; FLOWERS DULL GREENISH
        WHITE; WINTER TWIGS SLIGHTLY FLUSHED RED.
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Figure 2: Example of a print-out of a plant record

LANDSCAPE VISIONS : THE END OF SYNTHESIS

A.J. Steeves-Booker

THE FOLLOWING was my slight contribution to a seminar for second year Landscape Architectural students, offered as part of Martin Spray's ecology course, in 1979. I have taken the liberty of some post-delivery amendments and I have included some thoughts which I introduced during a two-day course for Ministry of Agriculture, Fisheries and Food architects on 'The Farm & its Landscape', held at Gloucestershire College of Arts & Technology in 1983. I have also incorporated several arguments from a Christian Union debate in 1982, between Mike Norman and myself, on 'Determinism'. In all of this my position can be described as orthodox Christian. It will not be necessary for me to say that I am neither an ecologist nor a landscape architect, and I hope that both will overlook the errors of detail which I have made. I hope they will not overlook any errors of judgement on broader issues.

* * *

I suppose that all landscape architects, once their naive view of beauty has been widened by ecology, begin to lose all hope of finding any goodness in the world. That is the ultimate message that the ecologist has to impart and it is based upon the view that natural phenomena are parts of systems, illogically organised for survival in a universe which cannot itself survive. So the

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success stories of nature which had to my mind always combined logic, beauty and economy, can now be seen as part of a broader picture of ultimate failure - encompassing us all. An elm tree here, Western civilisation there, all in inevitable decline, despite renaissances, pious hopes, and Greenpeace heroics.

This is a reasonably jejune position in which to find oneself, but at least it should provide a certain light and shade to each day, if one searches for some evidence that perhaps the ecologist is wrong, and that he is just one more in a long line of brilliant, but partial thinkers. I would be loathe to attempt an analysis of post-Aquinas thought, but I do suggest that by looking at a few significant philosophical views, we can begin to detect an underlying trend in the way the contemporary intellect works.

Hegel introduced a concept called synthesis. This is not the harmless, if rather mechanical stage in the design methodologists' process, when survey and analysis information undergo a magical alchemy in the dance of the Creative Leap; it is an altogether different affair. In Hegelian synthesis, the rules of classical logic are destroyed. ("'A' cannot be non-'A'" becomes "there is 'A' and there is non-'A'. In real life these are not separate things, but they are constantly synthesised into combinations of opposites"). This means that something - say murder - can no longer be discussed in terms of goodness or badness, because for some it is good (the murderer) and for the victim it would presumably be bad. Everything has become relative. I suppose that doesn't sound very much, because nowadays most people think that way, but I believe it is very difficult to be true to the principle that everything is relative, and I think that eventually the ecologist will as well. The problem with synthesis is that it never provides an answer in the real sense of that word, because it cannot differentiate between opposites. All that it can do is pose an endless and unresolved series of questions. For the ecologist the kind of problem this causes can be illustrated by

the following hopeless imponderables. Is acid rain not an inevitable thing, maybe producing far better conditions than the tree-loving Scandinavian can ever imagine? Why waste so much detergent on oil-soaked seabirds, for their death will add to the fossil layers and no doubt to new sources of eventual energy?

The existentialists, combining some of the more histrionic of Nietzsche's ideas - particularly the unsubstantiated God-is-dead concept - went further along the non-moral path, but even their greatest exponent, Sartre, found himself accused of bourgeois morality when he took sides in the French/Algerian war. Of course, he had taken sides in an earlier war against Fascism, and was never accused of being middle-class then - but I suppose that in a relative world even a highly moral attitude can somehow be seen to have no real moral basis. It's all synthesis. I realise that these abstruse ideas do not seem very relevant to the landscape designer, but my thesis is that they are, and that all designers must understand something of the times in which they live. Philosophy has an infinitely greater influence than we realise through the general culture of TV, music, etc. Next time you have a real decision to make in your design, forget 'value-judgements' - the ultimately relative term - and see whether you might discover an occasional absolute. Better still, approach design in the visionary manner which is the designer's real role, keeping philosophy and method firmly in their place.

Marx was one of the great thinkers who made something substantial of all this philosophical vapouring. In his political system he believed he saw inevitable evidence for historical necessity, and he incorporated Hegel's writings on synthesis into his own theories, particularly those concerned with dialectic methodology. Personally I think he was mistaken, on both counts, but the idea of historical necessity was very important to the way we now are, for it was partial evidence for a nihilistic belief that we are pre-determined. Darwin's work also paved the way for such a view, and Freud gave strong support to the theory of psychological

determinism. In this theory, the child's relationship to its mother in early life determines the pattern of psychological make-up, and he and Jung took this further, relating it to the childish (religious) origins of the human race. B.F. Skinner is a leading exponent of sociological determinism, (see 'Beyond Freedom and Dignity', 1971) which claims that people can be fully explained by the way their environment has conditioned them. Since society plays a specially important role in that environment, society can and should use positive stimuli to bring about the milieu 'it' wants. Genetic determinism is, I think, the ultimate position. Francis Crick, a reductionist scientist, believes that man can finally be explained in terms of the chemical and physical properties that make up the DNA template (which he was instrumental in discovering). Man is simply a very sophisticated electro-mechanical machine. On the assumption that all men need a god, Crick's analysis of man explains the otherwise inexplicable worship of the computer which we are currently enduring.

Behind all of these views stands the psychotic figure of the Marquis de Sade. He believed that whatever is, is right. Any determinist view, including the ecological, must agree that de Sade's conclusion is the only logical one. The ideal of the strongest is shared in various ways by Darwin, Nietzsche, and Hitler. Ecology now embraces, in its more remote outposts, social ecology, and here man is made part of a predictable system of cause and effect. Despite protestations that social responsibility and scientific humanism will produce an Eden from which consumerism and waste will be banished, the truth is that the presuppositions of social ecology are precisely the same as those of de Sade.

All of this is a comfort to some, but not, I would think, to all. How can we reconcile the view of Martin Rees, Professor of Astronomy at Cambridge University, that a few constants - the mass of the electron and the strength of gravity, for example - determine the behaviour of the entire material world, including your mind.

How can we reconcile the views of Alan Guth of MIT and the 'militant atheist' Peter Atkins of the Department of Physical Chemistry at Oxford University, that the geometry of the Universe can randomly change from a state of absolute nothingness to a very small Universe containing a few initial kilogrammes of matter; that the laws of physics will be shown to be logically necessary - the only set of consistent laws there could possibly be in any Universe; that our Universe was created out of the void by logical necessity alone. If we are truly modern, and have grasped the concept of synthesis, it is, of course, easy. But if, like me, you don't believe the reductionists, and don't believe that words are relative playthings, you can easily destroy these monolithic ideas. After all, in an absolute void, where no-thing exists, how can there be 'logical necessity' to create anything?

The great and positive achievement of ecology has been to connect apparently unrelated things. The hypothesis that the fire-drive method of hunting created the world's grasslands, thereby exterminating the monster mammals of the Pleistocene period; the connection between poisons sprayed in the USA and the death of the Cahow bird in mid-Atlantic - these are within the tradition of Darwin's famous chain of events connecting the domestic cat with the bumble-bee. With this we can have no dispute. The arguments about extravagance and waste that cause me to think before I affix a sheet of clear acetate on to a book, in order to protect it, are sound, if rather annoying. I accept them. When, however, I am told how to design, and to see myself as part of a system, then I begin to look very closely at the basis of the assumptions which are being made. The assumptions claim to be integrated and unified, but, as I have tried to argue, I think they are partial, and therefore nonsensical. The most freakish manifestations of modern art and architecture are the result of partial attitudes, either in the form of mechanistic methodology, or of the 'creative leap'. (In many ways, this 'leap' is based upon an important facet of Kierkegaard's philosophy. He believed

that you could not arrive at synthesis by reason. Instead you achieved everything of real importance by a leap of faith. In practice, the gigantic, non-rational leap of faith led, amongst other things, to religious existentialism, absurdity in the arts, and the narcotic mysticism of Aldous Huxley and Timothy Leary.)

The landscape architect is at the junction of these two destructive and related strands of modern thought, seeking a synthesis, be it Hegelian or conventional. On the one hand, the evidence tells us that we are predictable machines, and that everything can be explained by reference to energy particles. Unable to face such a prospect, colour, nature, the songs of birds are hastily marshalled so that we can be calmed. There is no God, but let's just pretend that there is. How sad, and illogical it all is. No wonder the studios are empty. The ecologist can't help, and the humanist, beating his breast in a futile attempt to inspire the disillusioned, knows that they can see through the deception. Ecological humanism and romantic individualism converge and meet at the moment of synthesis, itself to be rejected as part of the endless and ridiculous process.

Professor Lynn White Jnr., writing influentially in 1966, linked the ecological crisis to Christianity. Divining in the first chapter of Genesis the origins of an exploiting, subduing arrogance towards nature, he concluded that we will have a worsening ecological crisis until we reject the Christian axiom that nature has no reason for existence save to serve man. I think we should resist an unthinking acceptance of White's interpretation, which determines man as simply a part of nature. Of course, if there is no God, then you can believe nothing else. But if there is, (and there are extremely good reasons for such a belief), everything changes. Nature can be seen in its proper place, created by God. Man shares the innocence of nature with the moral responsibility of himself made in the image of God, the ultimate moral being. There is such a thing as love, which cannot be described in mechanical terms; there is such a thing as inspiration, and it has

nothing to do with the creative leap. The methodologists are wrong, but their formulae, having wrecked the cities with what they laughingly believe is architecture, will wreck the countryside too. The ecologist, although he may defend that same countryside, won't know why unless he sees God behind all the systems.

This argument should not be mistaken for a simple emotional upsurge of primitive faith. It is, at least in part, based upon the corroborating evidence of modern information theory, which states that every code (such as DNA, or the structured organisation of the eye) must contain coded information. Such information cannot arise spontaneously from non-information. In other words, there is 'logos', not chance, behind the order of things. The second law of thermodynamics is also diametrically opposed to the idea that energy can be produced from non-energy. Faced with such clear, logical, easily demonstrated evidence, there is no clear, logical, easily demonstrated case for believing that everything is a product of chance - including yourself, curiously synthesised into a machine. You have real (but not exhaustive) free will. Since others share this same condition, it is only to a very limited degree that materialistic methodology and sociology are of any use to the designer. And as long as ecology maintains its neo-Darwinian basis-of order evolving through chance from planless chaos - it too is of limited use to the informed designer. However, by a simple shift - from an illogical to a logical position - ecology can substantiate the faith of Christianity and the findings of modern science. Nature is designed. A 'logos' has codified information into a planned cell chemistry, with economy and supreme intelligence.

The landscape architect, if capable of lifting his eyes to the sheer wonder of nature placed in such a context, could make real use of ecology. Working primarily with plants, a truly magnificent vision might unfold, heroic as well as simple, spinning and beautiful. Beauty could once again be used as a normal word. Gardens might appear unlike any ever seen, kaleidoscopic and rich. The countryside would grow again, as landscape principals, assistants and

technicians on site-visits celebrated their calling with free seeds, saplings and suckers, written off against entertainment expenses, scattered to the four winds. Unlike the Street Farmers of the 1960's, sowing grass in the city, the landscape builders in this vision would reverse the crass flood of reductionist nihilism which the countryside has suffered during the past twenty years. Students of every school of landscape architecture would be seen, in the manicured grounds that surround their institutions, tending experimental plots. Glass, metal, rubber and ceramics would be salvaged to become landscape building materials; the structures of defunct factories and vacant seminar rooms would be dismantled and used, not as sculpture, but to construct intensive, cheap propagators. Research would be a real thing, with practical results. Wild and sentimental ideas would co-exist with careful scientific effort, and at dawn all would join in a simple ceremony. In the cool clay, synthesis - born of despair - would be laid to rest.

Further reading

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THE LIVERPOOL INTERNATIONAL GARDEN FESTIVAL, 1984 : a bibliography

C.M. Young

IF THE garden festival is to become a regular landscape 'state-of-the-art' event in this country a corpus of its own literature should be developed, the genesis of which might be the eighty titles of this bibliography. Undoubtedly more has been, and will be, published on the Liverpool I.G.F. so while not being complete this bibliography nevertheless represents a good cross-section of description, analysis and comment published up to the end of October 1984. Understandably the bulk of this material is descriptive, and much of it reads like brief press releases, though it is to be hoped that more substantial and critical assessment of the I.G.F. will follow in the near future.

Excluded is the literature specific to festival events and to major integrated functions (e.g. catering, maintenance or transport), to the various trade and tourist promotional enterprises and to the local press coverage, all of which might justify compilation and study elsewhere.

Though over thirty different publications are included the 'art' and the foreign 'landscape' press are conspicuously absent. Despite this rejection, oversight or languor, information about the I.G.F. has been widely disseminated reaching parts not usually reached by the landscape profession and thereby introducing this aspect of our work to a wider public.

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GLOUCESTER CENTRE FOR ENVIRONMENTAL EDUCATION

D. Edmonds, I. Livingstone and N. Wheatley

The Centre for Environmental Education was established in January 1982, using funds supplied by the Manpower Services Commission, with the objective of developing environmental education initiatives for the benefit of the local community, including schools and colleges, community and interest groups, and the general public. Hosted within the School of Environmental Studies at the Gloucestershire College of Arts and Technology at Gloucester, the Centre has reflected some of the concern of town and country planners with environmental planning, design and improvement. Environmental Education is an ill-defined field which has tended to mean all things to all men. The Gloucester Centre, however, has attempted to raise the individual's understanding of the social, economic, physical, political and cultural environment through streetwork and fieldwork involving direct experiences, observations and participation. It has worked in four broad fields of activity in order to achieve this general objective:-

1. The collection and indexing of a wide variety of resources and information of all aspects of environmental education, in order that the Centre may become a learning base which is freely available to everyone;

2. The publishing of interpretation and information leaflets and packages about the local built and natural environments, and environmental issues within these;

3. The preparation and organisation of projects, surveys and trails for schools, colleges and the general public;

4. The development of an interest in the natural environment through the creation and use of nature areas, particularly in schools, and through individual projects involving sites of existing interest, such as Heron Pond and Robinswood Hill.

1. Resource Centre

The Centre is a useful resource base for environmental education within the School of Environmental Studies, which is part of a local authority college; the Centre has access to a library containing resources in disciplines which contribute to environmental education. Amongst its own resources, the Centre has information regarding activities or organisations in fields related to environmental education. At a national level, for example, the Centre is linked to the Council for Environmental Education, the National Association for Environmental Education and the Council for Urban Studies Centres. At the local level, for example, there is close contact with the planning authorities and environmental interest groups.

The Centre has produced its own material at both levels. Nationally, we have produced an index to the Bulletin of Environmental Education, for the years 1973-83. The index is divided into three sections: authors, titles and keywords. In an attempt to maintain some consistency to indexing resources in environmental education the Council for Environmental Education's keyword system has been used as a framework for the keyword index.

The Centre publishes a newsletter in poster form entitled 'Gloucestershire Environmental News' (GEN), which is distributed free to local schools, libraries and interest groups. The latest edition covers a wide range of articles including 'Autumn approaches', which describes seasonal changes in the natural environment; 'Roads', which is an analysis of the planning and

environmental issues concerning the local authority's plans to pedestrianise the city centre of Gloucester involving the building of an inner relief road which cuts through a large park; and 'Trails', which is the summary of a Cotswold Village trail published by the Centre. The newsletter fulfils two objectives: to inform the public of environmental matters and to publicise the Centre's activities, namely its resources, publications, and teaching commitments.

The Centre catalogues local and national newspaper cuttings and has started compiling computer files of data such as surveys of the flora and fauna in Gloucester.

In addition, the Centre has been the venue for successful Inservice Training for Teachers (INSET) days, a notable recent example being one in July 1984 at which the inspector with national responsibility for environmental education, H.M.I. P. Rupert Booth spoke on New Perspectives in Environmental Education. Some 60 teachers, educational administrators and town planners attended, at which exhibits of children's work done by the Centre in Gloucester and Cheltenham schools were displayed. The display material was professionally exhibited with the assistance of the Centre's graphic artist. The same display was mounted in London in September at the conference of the National Association for Environmental Education.

During the school summer holidays the Centre has a tradition of hosting open days for school children. The most recent was attended by some 45 children enjoying practical study in the college grounds and immediate residential areas. Work undertaken included the identification of trees and shrubs using leaf, fruit , flower and bark studies; the examination of pond life, such as insects, aquatic plants, and birds; and the observation of butterflies and bees and their favourite shrubs and flowers. Many children have come in successive years to these open days.

Finally, interest and pressure groups like the Civic Trust continue to use the Centre's facilities as a meeting place.

2. Publishing Information

The Centre has a tradition of publishing interpretative literature. Examples either published or in the latter stages of production include the following: information packages on places of interest like Gloucester Docks and the Cathedral Close, both of which are conservation areas of national importance. These packages illustrate architecture, history and planning issues; packages like the Gloucester Spa, Staverton Airport and Gloucester Roads tend to concentrate more on the planning issues raised. Some are geared to assist in the publicity of potential learning bases such as the Folly Farm Teaching Pack, and several cover important aspects of farming at Hartpury Collegeof Agriculture near Gloucester and are used by visitors to the College. In addition there are topic based broadsheets assisting in the study of the built environment such as 'housing' and 'pedestrianisation', as well as tree and village trails. Occasionally, the Centre updates the information contained in previous publications such as 'Science in Society' and 'The Business Environment' which are packages of local and national statistics useful to students of all ages.

3. Environmental and Design Project Generation

The Centre has a teaching and lecturing commitment to schools and colleges and other organisations. These include projects concerned with the design and layout of buildings and associated landscaping, with the involvement of an architect in the College, local architects and Centre staff using a grant from the Royal Institute of British Architecture. There is a project to interpret the planning system for careers and planning aid purposes through the production of a video, using Royal Town Planning Institute money. In conjunction with the School of Environmental Studies, the Centre continues its assistance with the college-based City and Guilds 365 pre-vocational courses involving practical study of issues and places.

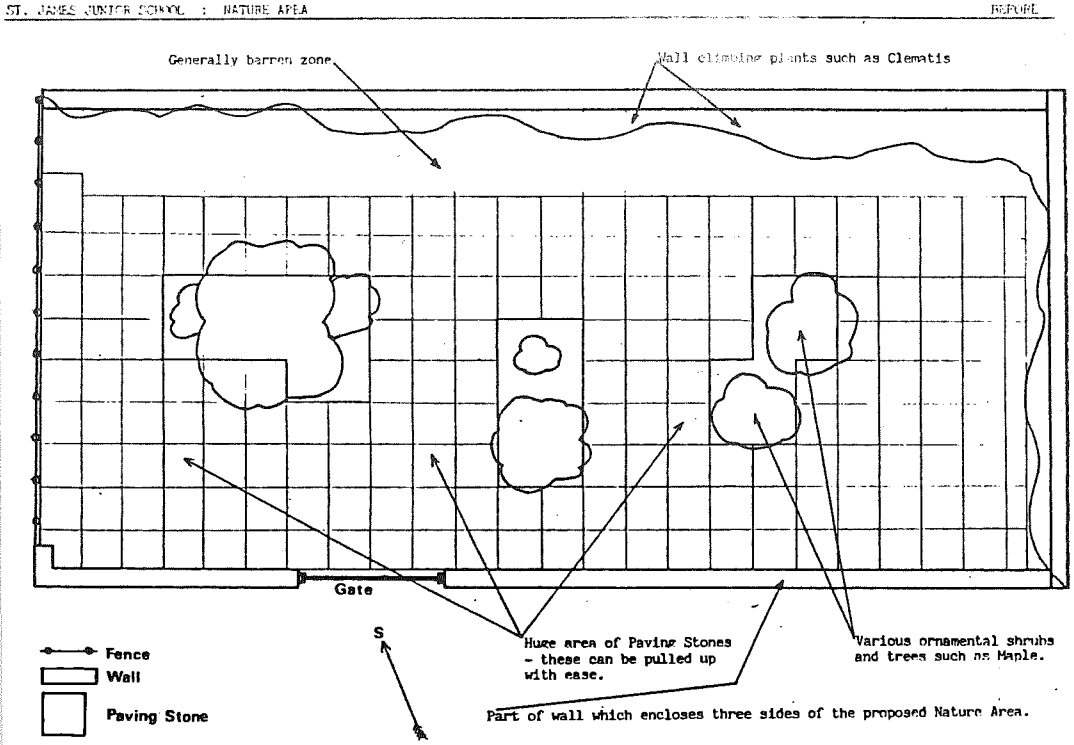
Response is made to requests from teachers to assist in the preparation and organisation of out-of-classroom exercises examining the environment. Such exercises range from town, village and tree trails designed to engender observation skills to the detailed examination of a planning issue which involves participation in the decision making process.

A successful example of the first type of work was with three classes of ten year olds spending an afternoon following three different trails around their suburban school in small groups, accompanied by personnel from the Centre and teachers. They observed architecture, local history, trees and shrubs, the local landscape and simple planning issues.

At a higher level a 6th form group examined the history of a controversial planning issue of a new road in Gloucester city, looking at the opposing factions and the involvement of political parties and governmental procedures, through an analysis of press cuttings, site visits and visits to exhibitions mounted by both opposing groups. Having weighed up both sides of the argument the group was encouraged to make up their own minds and inform the appropriate people and organisations. The problem involved a transport policy which would seriously impinge on the local landscape. It is a conflict in which the project officer of the 'Wildlife in Gloucester City' project has publicly participated in assessing the quality of the natural environment in the area and the possible damage by the development.

4. Wildlife in Gloucester City

This project commenced in September 1983. It was initiated jointly by the Centre and the Gloucestershire Trust for Nature Conservation as a pilot study. Its aim was to encourage the local community, especially schools, to become involved in the study of conservation of the wildlife which share their environment. From the start it became obvious that there was a definite need for such work, as many schools have contacted the project officer with particular



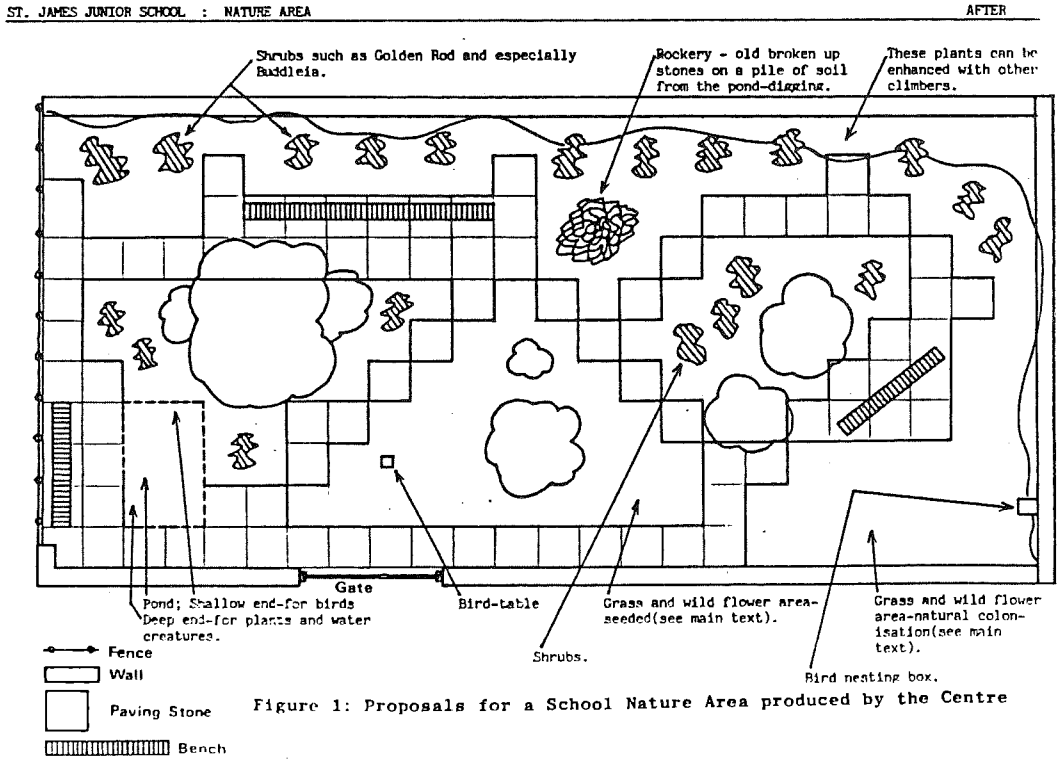


Figure 1: Proposals for a School Nature Area produced by the Centre

reference to setting up School Nature Areas (SNA's).

SNA's are plots of land within the school grounds set aside for the children to observe plants and animals in the field. Their success depends very much on the enthusiasm of the school staff who use the area on a day to day basis. Recently the Playing Fields Maintenance Unit of the County Council has shown considerable interest in SNA's and have been involved in all the stages of creation, such as providing and planting wildflower seeds and subsequent management.

The Project Officer would like to see the greater input of wildlife conservation in the educational backgrounds of Playing Field Officers and has given a talk to the South West Association of Playing Field Officers to this end. Their involvement would be highly beneficial since schools are often wary of embarking on such projects due to a lack of resources and expertise. The Project Officer endeavours to keep the areas as simple as possible, encouraging the planting of hedges, shrubs and flowers for butterflies and the inclusion of ponds. They are surprisingly easy to create (a morning's hard work) and soon attract a great variety of wildlife.

The majority of schools within the city are lucky enough to possess playing fields so the creation of a SNA involves the relatively simple task of setting aside an appropriate corner. This can then be enhanced and managed accordingly. However, every school is different and one particularly exciting project concerns St. James Junior School, which is situated near the centre of Gloucester City. As is shown in the site plans (fig. 1), it was recommended that some paving stones should be removed and the area planted up with colourful, nectar-producing shrubs in order to attract insects, especially butterflies. It was also suggested that one area where the paving stones had been removed should be seeded with a wild flower mixture, leaving a second

area to colonise naturally. This would provide a rich habitat for insects and butterflies, as well as a useful comparison with the artificially planted area.

Both the Headmaster and Project Officer agreed that by making the area greener it would attract more insects and other small creatures, which in turn would attract a host of birds. In addition the area would also be improved aesthetically. The sketches also include room for a possible pond. Such an area requires a small amount of capital input which is important in these days of educational cuts. It also needs very little management which is an important consideration as teachers are very busy people and schools are often closed for long periods. When this project at St. James Junior School is completed it is, as with other SNA's, likely to become a valuable asset to the school.

Thus, in this respect, the Centre is concerned with modifying the townscape and increasing the learning possibilities of many Gloucester children and illustrates the whole philosophy which involves the work of the ten staff in the Centre.

THE IRISH INSTITUTE OF LANDSCAPE ARCHITECTS *

Charles Potterton

At a time when environment awareness is increasing - perhaps proportionately as our landscape deteriorates under pressure from industrial and other development - landscape architecture needs to be recognised as the one design profession which is concerned with the whole outdoor environment. Its work inter-links with that of architecture, civil engineering and planning, and with ecology, horticulture and the natural sciences, but it also covers areas not touched by any of these disciplines: its chief function is to adapt the landscape to the new demands being made on it by our changing society, conserving what is valuable, repairing damaged environments, and creating new places.

The Institute was officially formed by Irish landscape architects (who were previously members of the Landscape Institute in London) in September 1983. The Institute's application for affiliation of I.F.L.A. was also accepted by the Grand Council in September 1983. We have taken this step because there is urgent need for a professional landscape architectural 'voice' on the Irish scene, and it is essential that this should be locally based. We are anxious to see improving standards of landscape design accompanying the future development of the country, and to see the professional participate fully in such developments. We will also press for the establishment of a professional course in landscape architecture within the Third Level Education Programme.

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Landscape architecture in Ireland is at its formative stage; indeed its presence as a design profession is only now becoming apparent. It is of immediate concern to the Institute that landscape architecture develops and plays an ever increasing role in shaping and forming tomorrow's environment. To achieve this aim landscape architects must seek an expanding role in the implementation of public and private projects. Only by such an approach can we look forward to an increase in the number and quality of landscape design projects which are implemented.

Landscape architects frequently work as part of a design team with architects and engineers on major projects; however, there is an increasing number of projects in sensitive environmental areas where only a landscape architect has the experience to organise and co-ordinate the design team and achieve satisfactory solutions. Good standards of design and environmental protection demand that the profession seeks these key positions for its members.

Landscape architects have already been able to participate in a number of large and interesting projects, including Lough Key Forest Park, Co. Roscommon, Electricity Supply Board generating stations at Aghada and Money Point, and several Industrial Development Authority estates, as well as commercial developments and urban housing for local authorities.

There are, however, unique problems facing the landscape architect in Ireland. Although the situation is improving there are relatively few landscape architects or experienced contractors, and also people in a position to employ them.

Each project therefore, has to be treated very much as an educational process. An example of this was Dame Sylvia Crowe's involvement with a major power station at Turlough Hill. Subsequently, landscape architects have been involved with the power stations at Aghada and Money Point.

On a much smaller (but no less important) scale another example of this education process could be seen during the construction of a town park at Tullamore, Co. Offaly. Because of the lack of experience of 'Things Landscape' within the labour force, a specification had to be written which gave detailed, but easy to follow, instructions on the storage, handling and planting of trees and shrubs. This was done by giving a series of written and graphic instructions within one document.

The planting was successfully completed and a second scheme, using the same techniques is currently under construction.

In general, the population of Ireland seem to have always been more verbally than visually orientated (one can see this in the number of poets and playwrights this country has produced). The visual arts seem to have suffered through this, not least of all landscape architecture.

The absence of an accredited third level course in landscape design on this island is a matter for concern to the Institute. Such a course would serve as a centre of excellence within the profession. Given the resources, it could prove to be a promoter of innovative research and help to provide answers to the specific problems of a developing Ireland and the environment in which it must grow.

The Institute aims to increase the public awareness and level of expectation in the outside spaces of our towns and countryside. Only through a well informed public can we ensure that the heritage we have been bequeathed will be safeguarded and enhanced for future generations. We see a pivotal role for the landscape designer in the work of safeguarding and enhancing this island on which we must live.

DEGREE DISSERTATION TITLES

Every landscape degree student at Gloucester presents a dissertation, which gives the opportunity of individual research in a subject of relevance and interest. Below are listed the successful submissions for 1984. It is hoped that regular publication of such a list will promote the dissemination of student-motivated research. These documents can be consulted in the College Library and abstracts may be obtained from the Librarian on receipt of a stamped addressed envelope.

ANDREWS, Catherine M.	The Front Garden: the value to the suburban environment
BEST, Paul J.	Naturalistic Inner Urban Residential Landscape: a case study of Surrey Docks Housing Area One, London
DAVISON, Keith H.	Trees in urban streets: an enquiry into their value
DEAKIN, Antony F.	British railway trackside: its existing problems, the opportunities for improvement & benefit to be gained along passenger lines operating within industrial zones of conurbations
DEN HOED, Gerald	The use of planting in urban parks: cost implications to management
DRIVER, Keren	Urban river landscapes: a neglected national resource
FAWCETT, Jacqueline-Maria	Landscape images: a study of the rural landscape, image, reality & future protection
FAWCETT, Richard C.	The Somerset Levels & Moors: the implications of drainage in respect of the future balance of agriculture and nature conservation
FIDLER, Helena E.	Burial grounds: their conservation and future

HILLS, Nicola M.	Tourism in the Cotswolds: its effects on the village character
JOHNSON, Anna M.K.	The future urban landscape explored through Utopia
Le RAY, Marianne L.	Genetic conservation: the need to protect the diversity within the British flora
MANNING, Ruth E.	Post-Modernism in Landscape Architecture
MATHEWS, Amanda J.	Design with archaeology
McGUFFIE, Alexa H.D.	School grounds: an examination of their extended use
MELLORS, Timothy J.H.	Genius loci: a spiritual and geomantic examination of place
NASH, Denys A.	Wildlife & woodlands: a declining habitat, ancient woods & small woodlands
PLATTS, Nicolas I.	The Stroudwater, Thames & Severn Canal: an analysis of its role & conditions, with reference to the policies & proposals expressed by local organisations towards its future recreation development, and their impact upon the canal corridor
POPE, Megan F.	Environmental pressure groups: their roles and effectiveness in Britain today
RONALD, Katharine M.	River engineering & nature conservation on rural lowland rivers of England & Wales
THOMSON, Justin D.	A quarrying & mining Commission: the case for introducing a national agency for minerals into the landscape planning system of Britain
TODD-JONES, Olwen E.	Biofuels in the landscape: an examination of the potential for biofuel production in Great Britain, and the resulting landscape, ecological and social effects
WARE, Louise	The landscape of industry: a case study

REVIEWS

B.S. 1192: Part 4: 1984
CONSTRUCTION DRAWING PRACTICE
Part 4: Recommendations for landscape drawings

THE PUBLICATION of Part 4 of Construction drawing practice is a development/revision of B.S. 1192: 1969 and deals with recommendations for landscape drawings but like so many recent British Standards provides only part of the necessary information - it should be used in conjunction with B.S. 1192: Part 1 and B.S. 3975.

The Standard illustrates and recommends the best commonly accepted forms of graphical presentation used to communicate information with accuracy, clarity and consistency of style within the construction industry and for this reason becomes essential reading for Practitioners and students of Landscape Architecture.

Recommendations concerning the various stages of drawing preparation, the use of suitable scales and methods of illustrating landscape information or topographical maps are all very familiar but some of the soft and hard detailing may not be to everyone's liking. The detailing for drainage works, curve details and setting out is very straightforward but the kind of detail given in Appendix C will be over-elaborate for most classes of landscape work. Appendices D and E concerning contouring will have a ready application and Appendix G illustrates the value of computer graphics in landform studies. Generally there seems to be a movement towards the use of symbols but it may be some time

before the extensive range contained in Table 2 become accepted and used with confidence. A very useful checklist of information commonly needed for the preparation of landscape drawings is included in Appendix A Table 7.

A general adoption of this Standard will result in familiarity with commonly accepted forms of presentation and should result in greater efficiency in the preparation and interpretation of landscape drawings helping to reduce the risk of confusion during execution of the works. The style of graphics used may not be everyone's choice but the publication does provide a uniform base from which to work and is therefore recommended as a useful guide to both Practitioners and Students in Landscape Architecture.

SPECIFICATION '84: Volume 3 Landscape and External Works
published by Architectural Press

THE LANDSCAPE section of this well-known publication is again edited by J. St. Bodfan Gruffydd PPLI, with contributions from other landscape architects, and now runs to some forty-seven pages. The topics covered include the organic landscape, glasshouses, hard surfaces, fencing, fittings for external works and a short section on light estate roadworks.

The kind of information contained in Specification '84 continues to provide a useful starting point for designers and specification writers to assimilate outline requirements for many classes of work and to adapt the draft clauses to cover particular applications. The Proprietary Products section includes materials for ground reinforcement and stability, all relatively new to landscape work. Specification '84 provides a useful source of up-to-date information to all concerned with the construction industry.

John Simpson

THE GARDEN BOOK by John Brookes, Dorling Kindersley, London, 1984
288 pages, £12.95

THE MAJORITY of gardening books published each year, usually contain an obligatory page or two on 'garden design' and are then subsequently filled with photographs of 'horticultural prize-winners', with little reference being paid to their contribution towards a cohesive garden layout.

In welcome contrast to this are those publications by John Brookes which have always placed a heavy emphasis on the planning and design of the garden as a whole. Perhaps his most notable skill has been his ability to show how to manipulate and engineer space within the private garden - creating gardens that are not only enjoyable to look at, but also to live in.

This approach is maintained in the newly published "The Garden Book". Most of the problems facing the would-be amateur designer are dealt with in a logical and practical manner, from initial site surveying, through to layout and construction techniques.

Possible design solutions are thoroughly illustrated in a large section of their own, with colour photographs of existing gardens and line drawings of possible alternatives to the same situation. The examples show, yet again, what is possible with thoughtful association of texture, form and colour, using, in the main, stone, timber, water and plant material.

To those familiar with other books by John Brookes, particularly "The Small Garden", it may be just 'more of the same'. Indeed, much of the technical information is necessarily similar, as is the format of the book and some of the ideas.

Perhaps only a few will be motivated sufficiently to pick up a trowel themselves, but if it raises the expectations of private householders as to what they ought to expect from a professional designer when working on public, as well as private spaces, then it will have served a useful purpose.

Martin Portus