LANDSCAPE ISSUES

SPECIAL RELATIONSHIPS

Frederick Law Olmstead is often credited as being the father of modern landscape architecture. He made a visit to England in the early 1850s, where it is said he was inspired by Birkenhead Park. It was in the USA that a professional role was defined and given the title Landscape Architecture. Full-time education in the discipline was started there at the end of the 19th century. No doubt practitioners from both sides of the Atlantic visited and were inspired by the others' natural and man-made environments. However, after the end of the second World War, there was a flood of aspiring landscape architects from Britain seeking education in the States. (A flood in landscape architecture, by the way, can be numerically equated with the fingers on two hands!). It is worth noting that two such members of our profession now teach here in Gloucester.

As courses in Britain developed during the 1960s and 70s, it was not unusual to find visiting American teachers of landscape design injecting a forceful enthusiasm to the rather more staid techniques of their British colleagues. The Gloucestershire course of the late 60s and 70s, then located in Cheltenham, offered one year contracts to a number of such young teachers. The names of Grove, Porter, Best and Nelson will be remembered with affection and with some awe by those students with whom they engaged. (Some, it is feared, may never have recovered from the contact!). In 1974, we were able, for the first time, to host a small group of landscape architecture students from Illinois and Pennsylvania. They stayed for three months taking part in our courses and gaining 'credits' for their work.

It was ten years later in 1984 and after our own students had made a field-study tour to the east coast of the USA that another link was established. This led to a ten week stay in Gloucester by Professor Michael Hodges and some of his students from Michigan State University. As a result of this visit, a small number of our students were able to visit Michigan and other parts of North America. A member of our staff was also invited to visit and take part in teaching at the University. It is with some satisfaction that this year we were able to act as host to a second group of MSU students once again led by Professor Michael Hodges.

It is our hope that preliminary discussions with the School of Landscape Architecture at Montreal will soon enable students from that University to visit us. This will follow contacts by which staff at GlosCAT and Montreal University have for a number of years exchanged teaching roles as well as information.

It is to these and many more links across the North Atlantic in mind, that we dedicate this issue.

Gordon Hyden

STIMULATING IDEATION IN THE PROCESS OF SITE DESIGN

Duane Mezga

Teaching creativity in site design can sometimes be a frustrating and apparently impossible task. At first glance, much of the design process seems to be based upon intangibles. The traditional "black box" view of design creativity appears to present unsurmountable obstacles to any objective teaching approach. As design educators struggle to understand the nature of creative design and how best to teach it, they confront subject matter which often lies more in the areas of aesthetic opinion, hypothesis and artistic expression than in rational understanding.

Nowhere is the uncertainty surrounding creativity more noticeable than in that step of the design process which focuses on creating new designs. Generating a range of novel ideas is central to successful design. Yet studio design instruction has often left idea formation to the resources of individual students. Since idea formation, or ideation, generates the kernels of design solutions, the absence of a coordinated effort to optimize ideation within instructional models is puzzling.

This paper addresses that problem by presenting an instructional approach for fostering ideation within site design studios. It suggests both specific ideation methods and a sequence of presentation which may be used to improve innovation in design thought. The paper goes further. Rather than continuing to rely on the traditional graphic methods of design, it elevates verbal or word oriented methods of ideation to a level comparable with that of image or graphic methods and attempts to blend the approaches.

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The potential of words as creative design tools has been largely under-developed. Verbal aids to design instruction have traditionally been employed to organize, explain or support graphically presented concepts (Jones 1980). With few exceptions verbal ideation methods in graphic design have been utilized in non-creative roles such as program formulation and design documentation. Through its increased emphasis on the verbal, the proposed instructional approach rates as both non-typical and innovative.

The instructional approach has been applied in an informal manner in introductory site design studios. Results have been encouraging. While statistical analyses have not been carried out in order to document results, a practical review of design products has indicated a trend toward more innovative design solutions among entry level students. In addition, the approach appears to foster a sense of direction within the creative process. Design feels less imposing, ill-defined or arbitrary. Students also appear to be more comfortable recognizing their own skills as important design resources and are less likely to resort to sterile, cookbook design.

Ideation and the Demands of the Design Process

The basis of this approach lies in the coordinated balance among graphic and verbal methods of idea generation. Since detailed site design at Michigan State University is predominately graphic in nature, verbal methods must be carefully folded into the process of studio design in order to avoid confusion. Before one can fully appreciate the roles played and the advantages that verbal ideation methods offer, one must first understand the emphasis placed upon design accountability by American landscape architects in both education and private practice. Professional offices demand that designers be able clearly to discuss and document the reasons supporting their design decisions. While complete documentation may not be feasible, professional expectations clearly point in that direction. It consequently becomes an important task for the design instructor to educate students to be open and accessible regarding thought process development.

Accessibility generally appears in the forms of design documentation or explanation. At Michigan State University, design documentation follows the accepted graphic format of thumbnail sketches and rough plan

drawings. Verbal explanations which accompany sketches and plans usually appear in either the form of rough plan notes or preliminary design specifications, which eventually find realization as construction plan notes or as final technical specifications. It is important to stress that demands for design documentation extend to all aspects of the site design effort: from subjective design to objective site planning and from implementation drawings to aesthetic, artistic design. The "black box" view of ideation commonly associated with the artistic aspects of design is not exempt from the need for clear explanation.

While allowances for internalized decisions do occur, explicitness is highly valued and its relevance to an individual designer's accountability stressed. Frequently in offices, accountability issues are encountered during supervisory critiques, client feedback sessions and public meetings. Experiences of this sort strengthen the value of verbally oriented design learning. Design instruction at Michigan State attempts to improve design accountability and performance by developing effective ideation skills in its graduates. But before explaining how ideation is coordinated and taught, a selected view of the ideation process along with some basic resulting assumptions regarding studio instruction must be made.

Ideation. In terms of a general view of ideation, it appears to be a complex process of thought association. Problem conditions act as mental stimuli (Crawford 1964, Osborn 1953 and Paivio 1971). These stimuli generate ideas which are then chained or linked together to form sequences of thoughts. These sequences eventually result in the development of what is felt to be a completely new idea. Regardless of the nature of the problem, aesthetic design or functional site planning, innovative solutions result from the ability of the problem solver to create as many possible alternative idea sequences as feasible (Koberg and Bagnall 1981 and Jones 1980). The creation of new ideas through alternative sequences requires a thought process which optimizes opportunities to respond to a variety of problem stimuli. Thus the ideation process focuses upon discovery and stresses mental flexibility through complex and patterned response.

While the occurrence and necessity of ideation appear to be universally accepted by design or problem-solving professionals, its actual nature remains under question. Individual interpretations of the process seem to be based upon the acceptance of one of three general approaches (Paivio 1971 and Skinner 1974). In the first case, one may see ideation as a rational or objective activity. Most often this viewpoint exercises itself in terms of verbal language and sequential thought patterns. Ideation is presented as a rather complex process of extensive work association. Words generate other word responses. Visual images are taken to be the by-product of verbal stimulation. New ideas are thus modified forms of previously held thoughts. Most researchers hold this traditional, verbal view of the ideation process.

In the second case, ideation is viewed as an integrally related word-image activity. Imaginal thought is seen as operating with its verbal counterpart. The mind creates images at will and these are then altered through association to form modified or new images. Words or images equally facilitate the process of ideation. For the visual designer, the tendency to sympathize with the imaginal view appears to be common in the literature (Rothenberg 1979). Graphic artists commonly present ideation as a system of images rather than words. Even some literary artists seem to express ideation as a combination of words and images in generating their ideas. The concept of visual thinking reflects the image preference of physical, graphic or form designers (Kepes 1966). In the area of research, imaginal thinking receives less support than verbal processes, but it is gaining popularity (Paivio 1971 and Rico 1983).

A third view of ideation is forwarded by researchers and social scientists who adhere to a "behaviorial" approach to learning. Behaviorism perceives ideation as the formation of sequences or chains of ideas based from some initial stimulus (Nye 1974 and Carpenter 1974). Each idea in a chain reinforces the previous stimulating thought and stimulates the next thought in the chain (Skinner 1967). While this concept of chaining appears consistent with both the verbal and imaginal views of learning, major differences do exist. Free will on the part of the designer is denied. External environmental stimuli are deemed responsible for initiating and directing design behavior. Intuitive feelings about design are taken to be side products of design actions.

Behaviorism remains largely untested in regard to creativity in design, although numerous examples in applied psychology document its effects in other areas of social activity (Skinner 1974). The absence of strongly supporting data and the strong social bias toward free

will and personal creativity detract from its full acceptance by designers and even by many of its social advocates.

A review of these three theories of learning resulted in an attempt to combine the positions taken by the verbal and image oriented schools. The rationale of the verbal approach proved to be especially influential and caused a reconsideration of the traditional graphic view of the ideation process. This reassessment resulted in an attempt to increase instruction in the areas of verbal ideation. Although many questions regarding how effective the verbal ideations methods would be in a graphic or form design field, attempts to alter the traditional mode of image ideation were undertaken.

Ideation Methods and Design Instruction

Demands to coordinate and balance the verbal and imaginal approaches of ideation necessitated the acceptance and development of several assumptions. First, the process of ideation was defined solely as the creation of new thoughts. Any new ideas could be subsequently refined to lead to specific design solutions. Ideation was thus taken to be different from the process of applying ideas to problem situations (Koberg and Bagnall 1981). Second, it was assumed that ideation could be taught; it wasn't viewed as some mystical process beyond comprehension. Third, ideation was seen as a divergent activity, that would broaden a designer's perspective or perception of the problem under study. Fourth, any attempt to select specific ideation methods must have considered the manner in which the human brain was theorized to operate (DeBono 1969 and Sommer 1979). Physical designers often assume that thinking in images or mental pictures is an accepted reality for all people. This was not assumed to be true. As a result, the verbal process of learning was seen as potentially an equal partner in design ideation. Finally, attaining optimal effectiveness in the ideation process was viewed as achievable through a coordinated balance among verbal and imaginal methods (Paivio 1971). Individual ideation methods were selected to fit the various needs confronting designers at different stages in the design process. In the initial phases of design, ideation methods were matched to the more generalized design needs of problem definition. At this level, program needs represent category types which may be viewed as containing potentially many possible detailed responses. After the problem definition phase, methods reflect a progressive convergence and thus mirror the gradually narrowing focus of design problem solving. The "scale" of idea generation was thus seen to change sequentially as the designer's thought process moved closer toward a single, and more specific solution.

Following the acceptance of the set of working assumptions, ideation methods were reviewed from an instructional point of view. Numerous methods were evaluated and their compatibility with design studio format was assessed (Crawford 1964, Koberg and Bagwell 1981 and Parnes 1977). "Studio fit" became an important issue for several reasons. First, design instruction at Michigan State is structured along some well defined learning unit tracks. Methods were rated more positively when they complemented appropriate learning units. Compatibility was also viewed in terms of method coordination with the type, "scale" and sequence of idea demands dictated by the problem solving process. Furthermore, design studio enrolments, which frequently average twenty-five to thirty people per two hour studio block, presented logistic and communication problems for both the instructor and the students. Methods which could more easily be explained and utilized by large numbers of people within limited time constraints were rated higher than those which could not.

The efforts undertaken in methods review and instructional analysis resulted in the selection of four different methods of ideation and in a plan to coordinate their use within detailed site design problems.

Brainstorming.Ideation is introduced into the design process during the early stages of project familiarization or definition. Because of its rather general nature, brainstorming was selected as an appropriate first method. It establishes both an initial foundation for other more specific ideation methods and serves to orient students to the project (Osborn 1953). Brainstorming exposes students to the non-judgmental and flexible attitude that is required during the early steps of the creative process. It further helps to explore, define and categorize problems and to clarify problem limits. By defining the student designer's view of the problem, brainstorming furthers the understanding of the level of personal design knowledge. Self knowledge generally proves crucial in efforts to abandon typical or standard design solutions and to replace them with unique ideas.

In the brainstorming process, program design elements and

needs are explored using the procedure of open or free verbal association (DeBono 1970 and Koberg and Bagnall 1981). Since the general process of brainstorming is relatively well known, little further explanations are needed to clarify its nature. Suffice to say, the method requires quick idea formation, an accepting attitude without the prejudgement of any ideas and a willingness to explore any ideas related to the program under study. The results of brainstorming sessions are presented to students as the most preliminary of creative and organizational efforts. After a short incubation period, usually between two and five days, results are discussed and utilized in the next attempt at ideation. Because brainstorming acts to introduce problems, more focused methods of ideation are required before a specific solution can be achieved. Brainstorming functions as a transition to the next step in creative ideation.

Clustering. Like brainstorming, clustering utilizes the process of verbal association to generate ideas (Rico 1983). Clustering differs in its ability to direct the association process and to enable a problem's focus to be established. Even though this method was developed as an aid to literary composition, it offers much to physical site designers. Coherence, clarity and intuitive expression are facilitated by the method, these qualities being attained by tapping the potentials of the right half of the brain.

The concept of clustering is connected to the current controversy surrounding right versus left brain function and activity. Clustering attempts to stimulate the pattern and image recognition capabilities thought to center in the right side of the brain. By restraining the logical or mathematical functions of the "left brain", clustering taps the aesthetic, imaginal and pattern qualities of the brain's right side (Rico 1983).

Instead of open or free association as experienced in brainstorming, clustering entails forming directed sequences of ideas. Pattern and coherence result from this directed quality. Beginning with a nucleus word, a number of linear sequences of ideas are stimulated and are presented as radiating from the central nucleus. The words composing each cluster sequence act as a trail, tracing thought development through the association process. The nucleus word ensures coherence by directing the association process. Directed assocation from any given nucleus is continued until the designer experiences a "shift" in consciousness. This "shift" can best be

described as a strong emotional feeling or special insight into the nucleus word concept. Following the "shift", the clustered ideas are condensed in the form of a brief written summary. Individual words within sequences or the concept expressed in the summary statement can appear as new design ideas. While the nature and type of any new ideas retain a strong association with the nucleus, the method is exceptionally effective in generating new thoughts. The ideas and their related emotional or aesthetic qualities, freed from logical left brain control can then be transformed into sketches or graphic images.

Clustering seeks to move beyond the rational basis for ideation through its emphasis upon the intuitive or emotional aspects surrounding ideas and problem situations. In doing so it raises the issue of "black box" design. Individuals who are strongly rational in their problem solving beliefs may be unable to relate to the method, thereby reducing its effectiveness.

To sum up the process of clustering is applied to studio problem solving after brainstorming has established an overall sense of problem definition and has set problem limits. Nucleus words most often correspond to general category areas which have been generated by free association. Clustering then refines these rather general "category labels" further and formulates a coherent bevy of related ideas (Black 1962 and Ortony 1974). Since brainstorming and clustering remain at least partially verbal, their use imposes limits to landscape or physical designers. Studio attempts to cluster graphic images rather than words have not proven to be successful. The time needed to sketch and work out graphic ideas reduces the speed and flow necessary to achieve "shifts". For those reasons, clustered products require some bridge in order to be fully transformed into graphic representations. A transition from the verbal aesthetic to the imaginal mode is necessary. This transition is carried out through the process of "visual association".

Visual Association. Visual association uses images rather than words to create ideas. It is easily understood in terms of the traditional graphic approach of visual thinking (Kepes 1966), images being utilized as the nuclei of the ideation process. Association is stimulated through the combined use of slides and freehand sketches. The visual association process differs from its verbal counterpart in its speed of

operation and in the restraining nature of images. Students require more time to present, evaluate and understand the complexity of pictures. Complexity thus slows down the processing time of ideas. While breakthroughs or "shifts" do occur, the evolution of image ideas often is slower than that of words.

Visual association can be applied to both the site context and individual design elements such as benches, steps and walks associated with a project site design. Site context deals with both the immediate environment of the design study area and the relationships among program uses and site elements. Returning to the visual association process, a library of slide images is first introduced to students. These slides form a basic repertoire or foundation of design pictures for each student. Use, context, dimensions, material choices and other aspects of elements which might be stated in a verbal manner are presented as images in real life experiences. Attempts are made to minimize verbal cues and to utilize the human experience as a measure of design. Taken in this fashion, visual association has strong ties to the emotive and pattern functions which the clustering process tries to tap. Even though verbal cues and objective professional standards must eventually be introduced in some more comprehensive fashion, care is taken to reduce verbal learning.

The repertoire of slides is shown in batches, elaborating a single element at a time. Slide shows are coordinated with the evolving focus of design projects in studios. New ideas for elements under study are elicited as freehand sketches. These are treated as general types and not as final decisions. By viewing new ideas as types rather than as specific solutions, sketches act as the nuclei of other new ideas. This approach strengthens the divergent or expanding quality of ideation. Ideas can later be modified during the application process to fit the needs of detailed problem situations.

The concept of modifying ideas to form others provides the linkage to the last ideation method utilized in detailed design studios: morphological connections. This process, which also appears in some literature as "recombination", restructures known ideas by sharing parts of several thoughts. By analogy, it is similar to the process of cell meiosis and genetic recombination.

Morphological Connection. This final method of idea generation is the most specific of all those so far discussed. It is most effective when it focuses on individual site elements. Variations or new forms are created by transposing the fundamental attributes of each element (Koberg and Bagnell 1981, and Jones 1980).

Each element is first reduced to its basic attributes; forms, color, function, materials, etc. Single attributes and qualities are then restated in a number of alternative qualities or forms. All these quantities are then combined into a single matrix. Each attribute is designated as a column heading. The alternative qualities or forms of each are treated as entries under its attribute heading. The recombination process is carried out by working horizontally across the matrix, combining attribute entries. Horizontal recombinations may either follow a random pattern or some form of linked association based upon perceived functional relationships.

Attribute column headings can vary and may range from qualities such as physical form to functional qualities such as speed of operation. The products resulting from the recombination process are often found to possess notable variety in structure or functional traits.

In contrast to the three other methods of ideation, morphological connection is chiefly applied to the most physically realistic of design problems. It can be utilized in open ended or more generalized conditions, but its strongly analytical quality detracts from creative flexibility. For this reason, it is best suited for the more advanced stages of the problem solving process when open ended exploration is not a design priority.

Summary

Innovation or creativity in studio problem solving rests strongly on the designer's abilities to create a range of new ideas. Teaching effective methods of ideation becomes one of the most important functions that an instructor can perform. If a teacher can develop the capabilities of mental flexibility, open or non-judgmental thought and controlled idea association, he can greatly facilitate the creative process. In addition, students gain a greater familiarity with the entire design process and with their own skills as resources within design efforts. In basic site design studios at Michigan State, an instructional approach which actively promotes various ideation methods is

directed toward these ends.

Four different methods of ideation are introduced to students in a sequence that is coordinated with the needs of the problem solving process. Methods attempt to balance verbal and image related learning and address the level of generality demanded by different steps in the design process. Brainstorming is applied to open ended situations which surround the initial states of problem definition. Clustering refines problem types and acts as a transition from the general and conceptual aspects of design to those more specific and physically concrete. Visual association and morphological connections focus on the creation of innovative solutions for design context, interrelationships or physical site elements.

Taken together, the four methods arm beginning designers with a number of tools which can be applied in related design or site planning problems. In doing so, they prepare students to more effectively utilize the problem solving skills which are so central to the practice of landscape architecture.

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LANDSCAPE ARCHITECTURE AT THE UNIVERSITY OF MONTREAL

Bernard Lafargue.

The Early Years

Formal steps were taken in the mid 1960s to establish a
degree programme in landscape architecture in Quebec.
The only design programme that then existed in French was
taught at Montreal's "School of Architecture", the
so-called "Ecole des Beaux Arts". The creation of a
Faculty of Environmental Design combining several
disciplines was due to the initial effort of Dean Guy
Desbarats and is now known under the name of the Faculté
de l'Aménagement of the Université de Montreal.

In 1966 Douglas Harper was asked to establish a programme
in landscape architecture. The times were right since,
elsewhere in Canada, other new programmes were emerging –
notably at the University of Guelph and at the University
of Toronto (both in the province of Ontario). A certain
professional conciousness and fervour were also present
in these key early years. In 1967, Montreal staged Expo
'67. In the grandiose setting of this International
Exhibition the perfect opportunity arose for landscape
architects, both in terms of professional visibility and
the challenge of multi-disciplinary work. The quality of
the work was such as to show the need for landscape
architects on important projects. Their contribution was
further reinforced during the hosting of the 1968
Congress of the International Federation of Landscape
Architects (IFLA) in Montreal.

In the winter months of 1968, the programme in landscape
architecture was submitted to the University for approval
and during the fall of the same year the programme was
born, with six students and two members of Staff. At the
beginning, Landscape Architecture and Industrial Design

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remained adjunct programmes to the School of
Architecture. It took an additional four years for the
Association of Landscape Architects of Quebec (AAPQ) to
formally recognize the University programme. Peter
Jacobs, programme coordinator for the Landscape
Architecture "section" presented in the fall of 1977
another proposal to the University Council requesting
that the programme be recognized as an autonomous
department having a similar status to Architecture and
Urbanism (Town and Regional Planning). Finally, in 1978,
the Faculté de l'Aménagement was restructured into four
autonomous design schools. They are Architecture,
Industrial Design, Landscape Architecture and Town
Planning. At the same time, at master's level, a new
structure was implemented to encourage the representation
and the multi-disciplinary character of the Faculty. A
Master of Applied Science (MSc.A; mention: Aménagement)
was created and joined the existing Master of City and
Regional Planning.

It is interesting to trace the founding principles of the
programme and to show how it has evolved over these two
decades. An early paper prepared by Douglas Harper
mentions several objectives sought during the formative
years of teaching landscape architecture at the
University of Montreal.

The first notion was that landscape architecture should
be introduced in the early years of the four year
programme so that the student would have a good idea of
what he was working for and not have to wait until his
last two years. One may ask: "Why so early? Should you
not encourage a broader cultural education?". In Quebec,
a student's access to University is possible only after
completing two years in a Junior College in a pure or
applied science programme. This programme is supposed to
provide the student with a broad cultural background
permitting the University to specialize. The tendency by
other professional disciplines to acquire a "minimum
understanding" of landscape architecture was also
discouraged by this structure. Recently, admissions have
been opened up to students selected from Junior Technical
Colleges, and to the ever-increasing number of adults
seeking a higher education. University Admissions
policies have been tightened in other respects and have
reduced the previous "easy transfer" from programme to
programme; therefore a back door entrance to the highly
regarded programme of architecture can no longer be
achieved to the detriment of Landscape Architecture or
Industrial Design.

The second principle, as Harper states, "...was that the student must develop an involvement in problem-solving requiring interaction and collaboration with members of several disciplines not his own. He must, however, know the precise nature of the contribution he can make and understand his potential and limitations". From the onset this policy worked very well because the programme was in its infancy - six students in the first year, five students the second and two full staff members.

Expertise and support was often provided by professors from the School of Architecture. The 1970 student revolt provided a forum for cross-exchanging ideas and professional ideals. As a result, Landscape Architecture and Industrial Design came into being and later achieved recognition.

As late as 1977, the programme had kept many fragments from the 1970 reform. Most courses, either required or optional, were still based on a one or two credit structure. By this time, the permanent staff had increased to six but numerous technical courses were taught by university professors from other departments. At the same time, the design studio had already been established as a six credit entity. The only forum for "interaction" as prescribed in the early years was to be found in the first trimester of the first year, where courses were shared among Architecture, Industrial Design and Landscape Architecture. This introductory module was made up of the following theoretical courses: Introduction to Ecology; History of Environmental Design; Material and Graphics. The studio, common to all three Schools, had the purpose of initiating students to the design process, and to the organisation of outdoor spaces for human activities. Unfortunately, in the early 1980s, Industrial Design abandoned this common activity and it was followed later, in 1985, by the School of Architecture.

More recently, flexibility was sought in the structure of the programme, particularly in the later years, to permit a student to prepare her or himself for an area of special study that is best fitted to the interest and strengths of that student. This flexibility had always been a strong element of our programme and it is still very evident. In the early years, it provided great mobility for the student and the staff. Later it contributed to a search for excellence as new teaching techniques and models were experimented with. This gave us the solidity that the programme now enjoys. This

evolution was always positive and it shall continue. Future years will call upon this powerful attribute as the staff look at the potential of implementing a Master's Programme. Its inception will surely have repercussions on the existing structure of the Bachelor's degree in Landscape Architecture. Should there be two professional degrees? If so, what and where would the similarities be? If not, what would the difference be and what would the consequences be to the existing structure?

The undergraduate programme of Landscape Architecture consists of 120 credits taught over four years. At the University of Montreal, a credit constitutes a numerical value for a student's pedagogical activity. This activity may embrace either classroom activity or research. A credit represents forty five hours for a specific activity or for studio work. It may include one hour of class time and two hours of personal work per week, per trimester, or it may be a two hour laboratory (studio) time with an additional hour of homework per week.

Typically a course is valued at three credits, meeting once a week for a three hour duration over a fifteen week term. In addition, a studio meets four half-days for three hours throughout the term. The pedagogical norm, during a Landscape Architecture student's term is to have three courses and one studio, totalling fifteen credits. Courses and studios are offered in the fall term (September to Christmas) and during the winter term (January till the end of April). There are no evening or summer classes.

Recent developments

The present programme is both professional and generalist. As the only programme of its kind in Quebec, and the only French language programme in North America, the School tries to prepare students for all aspects of the profession. In its structure, the programme is based on three pedagogical components: compulsory academic courses, optional courses or electives, and design studios.

The compulsory courses are intended to encompass the introductory notions of landscape architecture; and during the later terms to convey the fundamentals of the profession. These courses are normally aimed at the more specific technical information which may be taught as an

independent unit or in conjunction with a design studio. Not all design studios fall into this pattern.

Out of eight possible design studios, (four years of two terms), only six are required. Flexibility is built in to accommodate an off-campus internship and an off-campus exchange programme. The last trimester is usually allocated to the required final project, thereby serving as a platform to synthesize four years of landscape architectural education. The required courses and studios make up seventy three credits or sixty percent of the programme .

The optional block of the programme consists of elective courses and design studios. A student has to follow a minimum of twenty six credits of elective courses and another six in the design studio. All these additional thirty two credits are to be taken within the Faculté de l'Aménagement. For the remaining fifteen credits, a maximum of nine may be taken in any other programme of the university.

The concept of the 1978 model was based on three principles – introductory courses; core courses; and, completing the sequence, a variety of exploratory courses. This structure is not to be construed as a linear progression but rather as an interweaving of these three notions.

The introductory block was to give a new student an overall view of the different design professions along with their respective disciplinary context. The intention was to introduce the methods, the tools of each profession and to explore what they shared in common. It was very easy to implement this concept with basic design and graphics. It stayed common to Architecture and Landscape Architecture until 1985 when the School of Architecture decided to suspend its contribution. The original introductory block started as a term activity and eventually was reduced to a month. Thereafter each school taught basic design and elementary graphics to their respective students. A lot was lost in eliminating the multi-disciplinary approach which had the purpose of "cross-fertilising" the design process. Now a few attempts are being tried again at the third and fourth year levels between Architecture, Landscape Architecture and Town Planning. These renewed activities serve as a shell to a multi-disciplinary team working on specific case studies.

The block addressing the core knowledge courses is the dominant teaching component of the programme. It encompasses all the fundamental courses that a student should acquire to achieve a minimum professional competence. These are deemed necessary for a future professional practice. In the programme structure, they are found among the academic courses and the studios. While courses convey a theoretical as well as a technical content, the design studios offer the opportunity for problem solving through planning, design and management.

The 1977 model presented to the University for departmental recognition was formulated on a similar concept, but the structure has evolved since then. Originally, the studio was conceived as the nucleus of a common core of knowledge and the theoretical or technical courses would complement the central theme that was being developed in the studio. A studio which had construction as the main issue, for example, would have two or three courses in parallel, feeding information and examples for the studio. We could thus identify a course which dealt with construction materials and another with specification writing.

This framework seemed logical and practical in theory. It was hoped that little overlap or no duplication of information would result and that the studio would benefit from the more structured classroom environment. Time was the best judge! Little by little, we observed that it was not the ideal situation. The experience showed that too often students complained of having to learn the theoretical issues while trying to apply them to the design studio. Technical courses showed the need of a time shift before it could be applied to a problem solving studio. In the early 1980s, a balance was achieved between the courses and the studios and now the key supporting courses have been shifted to the trimester preceding the studio. The word "balance" is carefully chosen to express a compromise between the "best" and the "appropriate best". In Montreal, the academic year (September till the end of April) consists of about seventy percent inclement weather, making site visits and outdoor teaching a limited experience. Moreover, not all courses can be taught during the fall trimester to benefit from the nice autumn weather during its first half. At present, each design studio is still based on one main theme – use of plants; construction; natural resource planning or urban landscape design.

The last block in the programme deals with all the optional or elective courses and studios given by the School of Landscape Architecture or the other three design schools of the Faculty. This is where a student will find the opportunity to enrol in off-faculty courses throughout the university network. The purpose of these elective courses, for the student, is to explore related courses in other departments in order to further general cultural education or to gain specialized understanding of a specific subject such as economics or computing.

Within the optional block, two distinct studios are offered. The first one is the off-campus internship and the second offers problem solving of urban landscapes. The internship is an intensive four days per week, over a six week period, in a government or private office. It permits the student to deepen his understanding of practice in a professional environment. There is basic staff supervision to check the validity and the thoroughness of the internship programme and the student has to produce a written report and a portfolio of work documenting his internship experience.

If a student chooses to do an off-campus study for either a half a year or a full year, in another university, he can usually match similar courses with the ones required by our school. Content and level is checked with the host university and a schedule of equivalence is established for the student prior to his departure. This reciprocity exists among the five Canadian Schools of Landscape Architecture. In the past, we have also placed students in U.S., French, Belgian and British schools. Under this exchange programme, we have hosted students from the U.S.A., Europe and Canada.

The present programme

The following listing of courses and studios gives an idea of the structure of the programme in its sequence and issues. The course title is only indicative and it is hoped that this summary will not mislead the reader, as it is not the intention of this paper to give a concise description of each course.

LANDSCAPE ARCHITECTURE PROGRAMME - UNIVERSITY OF MONTREAL

1. First year, Fall trimester

1.1 Introduction to Environmental Design: 3 credits
1.2 Applied Ecology: 3 credits
1.3 Graphics I: 3 credits
1.4 Basic Design Studio: 6 credits

2. First year, Spring trimester

2.1 History of Landscape Architecture: 3 credits
2.2 Methods in Landscape Architecture: 3 credits
2.3 Graphics II: 3 credits
2.4 Studio I: Basic Landscape Design: 6 credits

3. Second year, Fall trimester

3.1 Technical drawing and specification: 3 credits (*)
3.2 Grading and Drainage: 3 credits
3.3 Plant material I: 3 credits
3.4 Studio II: Landscape design with plants: 6 credits

4. Second year, Spring trimester

4.1 Landscape Construction materials and detailing:
*   3 credits*
4.2 Aerial Photography and Remote Sensing: 3 credits
4.3 Computers in Landscape Architecture: 3 credits (*)
4.4 Studio III: Landscape Design and Construction:
*   6 credits*
4.5 Other electives - Pedology: 3 credits (*)

5. Third year, Fall trimester

5.1 Visual Analysis/or Urban Open Space: 3 credits
*   (Cyclical-(*))*
5.2 Advanced Landscape Construction: 3 credits (*)
5.3 Free choice of an elective: 3 credits
5.4 Natural Resource Planning & Design Studio: 6 credits

6. Third year, Spring trimester

6.1 Bio-Engineering: 3 credits (*)
6.2 Pedology: 3 credits (*)
6.3 Designing with plants: 3 credits (*)
6.4 Studio: Advance Landscape Design: 6 credits (*)

7. *Fourth year, Fall trimester*

7.1 *Urban Landscape Theory: 3 credits*
7.2 *Free choice of an elective: 3 credits*
7.3 *Free choice of an elective: 3 credits*
7.4 *Studio: Urban Landscape Design: 6 credits (*)*

8. *Fourth year, Spring trimester*

8.1 *Professional Practice: 3 credits*
8.2 *Free choice of an elective: 3 credits*
8.3 *Free choice of an elective: 3 credits*
8.4 *Studio: Final Project: 6 credits*

*(* = optional)*

OVERSEAS OPPORTUNITIES

A review of the decade of options offered by Michigan State University's Landscape Architecture Program.

Michael Hodges

It seems appropriate in this particular number of Landscape Issues to review almost ten years of overseas option programs which have preceded the second appearance of students from Michigan State University at the Gloucestershire College of Arts and Technology. Interestingly enough, the prologue involved GlosCAT in the 1970s.

Members of the landscape architecture faculty at Michigan State University (MSU) began thinking of the beneficial experiences personally received while travelling abroad, as part of their own postgraduate professional development, and wondered if something similar could not be offered to the current students in the School.

Assistant Professor Gerry Grove was the first person that the author knows about to attempt to organize an overseas program option for MSU landscape architecture students. Gerry had spent a year at GlosCAT (1968-69) as a temporary lecturer. Early in 1973 he proposed and initiated some correspondence about a trip for students to experience Gloucestershire in the summer of 1974. Michael Hodges, then an Assistant Professor, tried to help further this idea and during a personal visit to the United Kingdom, made a special journey to GlosCAT during the summer of 1973. He was kindly shown the then somewhat cramped facilities of the Landscape Architecture Department which at that time was housed on the Cheltenham campus.

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However, the proposal never really got off the ground, and finally was dropped when it became apparent that there was insufficient interest among the landscape architecture students – who were especially reluctant to give up their summer jobs, so essential for many in order to help finance their education.

The first effective program in the sequence actually took place in the Americas. A newly hired assistant professor, Mark Frederickson, took it upon himself to establish an overseas program in Mexico. He worked in collaboration with the Office of Overseas Study, which coordinates all MSU overseas programs, to bring this opportunity to the landscape architecture students. A number of factors helped. Mark was enthusiastic and dedicated, he was familiar with parts of that country (from his graduate work at the University of Arizona in Tucson) and he spoke the language. In addition, MSU had recently negotiated an agreement with the Instituto Technológico (Regional) de Mérida (ITRM) to assist their English Department. This included provisions for exchanging faculty, and accepting some graduate students from Mérida to study English at MSU in East Lansing. Thus, the idea of landscape architecture students going "in exchange" was timely. A not insignificant factor contributing to the success was the proposed schedule of the program – it was to take place during an academic term rather than a summer break. This was (and still is) a most attractive feature for students. Also, it was more than just a short trip; in fact, it substituted for the entire spring term of 1978. Courses were offered to ensure that no students would be delayed in their academic programs. Twenty junior (third year) and senior (fourth year) students participated in this, the first Landscape Architecture Overseas Study term to be offered by MSU. All in all it was such a successful program that the stage was set for continuation.

Next came a radical change of scene. It involved Assistant Professor Duane Mezga and started when he shared his office with a Polish visiting scholar in landscape architecture. Professor Dr. Stanislaw Rutkowski had come from Warsaw Agricultural University – SGGW (WAU) to spend a few months of 1978 at MSU. Among other matters that were discussed was the idea of an MSU student visit to the Department of Landscape Architecture of WAU. It could also meet certain MSU-WAU cooperative goals and provided needed exchange currency for the Poles. Matters progressed quickly and 14 junior (third year) and senior (fourth year) students left to spend an enlightening spring 1979 term in Poland.

By now the idea had become established and the winter term 1980 saw a return to Mérida under the guidance of Assistant Professor Norman Dietrich. Our contact professor, Josefina Centeno de R. Valenzuela, was again most effective in placing 25 junior and senior students for board in private houses. This term included one student from the urban planning program at MSU who participated with the landscape architecture students in study, field trips and enjoyment of the sunny climate of the Yucatán peninsula.

The following year saw a change of scene and a return to Poland where Assistant Professor Tom Lambeth took 15 junior and senior students to the Ursynow campus of WAU, just outside Warsaw, for the spring term 1981. The group included two wives, and a landscape architecture student from the University of Minnesota – the first non-MSU participant. The program series could now perhaps be said to have become nationally established.

Because of climatic conditions, it had seemed advisable to schedule programs to the northern hemisphere in the spring terms and programs to central/southern regions in the winter terms. This proved so complicated in scheduling courses for the majority of students remaining on campus that we eventually compromised on the fall term for overseas study and restricted it to only senior level students participation. This reduced the number of courses which needed to be taught in order to keep the participating students "on track" for graduation without prolonging their four-year undergradute Bachelor of Landscape Architecture degree program.

For the fall 1981, Professor Tom Hazlett led the largest landscape architecture group to go overseas, totalling 28 junior and senior students in a third program to Mérida.

A change of venue occurred in the fall term of 1982 when, because of political troubles in Poland, it became necessary to find an alternative European location. Assistant Professor John Warbach organized a program with the Agricultural University of Wageningen (AUW), Land Planning School in the Netherlands. Thirteen senior students including an urban planning student and a MSU English major, plus a landscape architecture student from the University of Illinois, participated. This proved to offer an unexpected, but valuable experience because of the opportunity for the students to actually interact

with other landscape architecture students at the host institution. (There was no landscape architecture program at the ITRM in Mexico, and language difficulties had prevented much interaction in Poland).

Fall term 1983 saw a return, with Professor Tom Hazlett, to the ITM (formerly the ITRM) in Mérida. Twenty-six students including one spouse and a landscape architecture student each from Cornell University and the University of Washington participated in what turned out to be the last program to Mexico for a while.

Seeking an alternative European location Associate Professor Michael Hodges sought to reintroduce contacts with GlosCAT - now located on the Oxstalls campus in Gloucester. Thanks to the support of the Head of the Landscape Architecture School at Gloucester, Gordon Hyden and his colleagues in the Department, seventeen senior students went to England. The group included one MSU urban planning student, three landscape architecture students from West Virginia University and one landscape architecture student from California Polytechnic State University at San Luis Obispo. The advantage of being able to work along with the British landscape architecture students was appreciated as were the field study trips to notable examples of landscape architecture.

The next European program was focused on Belgium when Assistant Professor Curt Westergard organized a fall term 1985 experience for 16 senior students, all from MSU. This was hosted close to Brussels with the Katholieke Universiteit Leuven, Architecture Department and Department of Agriculture. A brief pre-term, two-week excursion to Poland for eight of those students was led by Duane Mezga.

Many modifications have occurred over the years; however, the purpose of the Landscape Architecture Overseas Option has not changed. Offering a unique educational opportunity for landscape architecture students to experience aspects of the profession modified by different geographical and cultural influences remains the primary concern.

The objectives of the Landscape Architecture Overseas Option have similarly evolved. One has been mentioned, namely that participating students should be able to do so without having to extend their total curriculum; another was that the program should be an optional,

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TABLE 1 : MSU LANDSCAPE ARCHITECTURE OVERSEAS PROGRAMS : Analysis of Participation

DATE	LOCATION	STUDENT PARTICIPANTS				LEVEL	INSTRUCTORS
		M	F	NonMSU*	TOTAL		
Spring 1978	ITRM, Mérida Mexico	9	11	0	20	juniors & seniors	Asst.Prof Mark Frederickson
Spring 1979	Warsaw Agric Univ Poland	10	4	0	14	juniors & seniors	Assoc.Prof Duane Mezga
Winter 1980	ITRM, Mérida Mexico	15	9	0	25	juniors & seniors	Asst.Prof Norman Dietrich
Spring 1981	Warsaw Agric.Univ Poland	8	5	2	13	juniors & seniors	Asst.Prof Thomas Lambeth
Fall 1981	ITRM, Mérida Mexico	13	15	0	28	juniors & seniors	Professor Tom C. Hazlett
Fall 1982	Agric.Univ of Wageningen Netherlands	5	8	2	13	seniors & 5th year	Asst.Prof John Warbach
Fall 1983	ITRM, Mérida Mexico	12	14	3	26	seniors & 5th year	Professor Tom C. Hazlett
Fall 1984	GlosCAT, Gloucester England	13	4	4	17	seniors & 5th year	Professor Michael Hodges
Fall 1985	KUL, Leuven Belgium	10	6	0	16	seniors & 5th year	Asst.Prof Curt Westergard
Spring 1987	GlosCat, Gloucester England	12	8	1	20	juniors & seniors	Professor Michael Hodges
	AVERAGE	11	8		19		
	MAXIMUM			4	28		
	MINIMUM			0	13		

* includes a total of 12 students from the University of Washington, Cornell University, University of Illinois, West Virginia University, California Polytechnic State University, SAn Luis Obispo, and the University of Georgia.

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rather than a required, part of the curriculum. A further important objective is that it should be an enriching exchange - encouraging broader interactions with the host students and faculty beyond the period of the immediate term.

Other objectives embrace those prepared by the Office of Overseas Study at Michigan State University (Faculty Handbook, 1986): to avoid duplication of course content taught in East Lansing by relating the subject matter to the unique environment of the host country; to utilize personnel and facilities of, and (without compromise to the academic program!) to involve students in the cultural activities of the host country as much as possible; to give the landscape architecture students a unique bi-cultural experience; to provide counsel and guidance to students regarding curricula, particularly with respect to the independent study course offered, and general academic queries.

A guide in determining who is selected as the program leader depends on the availability of a willing faculty member, with some regard as to rotation among the faculty in order to allow each full-time landscape architecture instructor a chance to participate if he/she is able to do so.

Curriculum changes in our landscape architecture program have now dictated further changes of term and student level and so that the tenth overseas option returned to England offering eleven junior level (third year) students their spring term 1987 at GlosCAT in Gloucestershire, under the leadership of Professor Michael Hodges. Also participating were nine senior level (fourth year) undergraduate students who were accommodated because the transition back to the junior level would otherwise have denied them the opportunity to go. One student was from the University of Georgia.

For the future, the spring term 1988 is planned for a return to Leuven, and in the spring of 1989 Assistant Professor Anthony Bauer is exploring the possibility of a term in Taiwan at the Tunghai University (with or without a side trip to Japan!).

A comparison of these MSU programs in relationship to other offerings by landscape architecture programs in the United States has been documented elsewhere (Mezga, 1981). So in conclusion, it is appropriate to comment on the exchange benefits.

Mérida generated no direct exchange since there was no landscape architecture program involved. Warsaw was able to send an additional three faculty members to the U.S.A, as well as support a return visit for Professor Stanislaw Rutkowski. He and Professors Dr. Edward Bartman, Andje Niemirsey and Dr.Przemystaw Wolski each spent two to four months in the States, between 1980 and 1983. Duane Mezga spent a sabbatical in the fall of 1980 in Warsaw and Michael Hodges paid a brief ten-day visit there in September 1984. Two short visits to Poland were also organised by WAU for students participating in the recent Overseas programs. A pre-term visit in 1985, before the Belgian term, and a post-term visit following the 1987 Gloucester term were both led by Associate Professor Duane Mezga.

Three senior level students from Wageningen spent the whole fall term at MSU in 1983 and three fourth-year students from GlosCAT spent part of their practicum in East Lansing during the spring term 1985. Two more students from Wageningen were with us winter term 1987 and stayed on for a further 5 months in the US.

In addition, a couple of German students befriended by the 1981 program in Warsaw, Poland, were encouraged to study at MSU. One had won a Fulbright Scholarship to help support herself, and her husband also came. (Incidentally they recently returned to the U.S.A. in May 1986 for a brief visit).

Two lecturers from GlosCAT have visited Michigan. John Simpson made a personal visit in the summer of 1985 and Alan Pinder was a visiting studio lecturer in the landscape architecture program at MSU for a couple of weeks during the early part of spring term 1986.

The benefits have indeed been great for the Michigan State University faculty and students and it is hoped they will continue to be so for us and all concerned.

Notes and References

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PEOPLE, POLITICS AND PLANNING; A CASE STUDY IN
DEVELOPMENT CONTROL IN NORTH-EASTERN AMERICA

Paul Rookwood

Driving east along Route 70 from the Philadelphia-Camden
metropolitan area you pass through mile upon mile of
strip development, manifestation of the American spirit
of free enterprise, virtually unfettered by any kind of
development control. The chain of gas-stations and
fast-food outlets, each vying for your attention with the
most obtrusive sign, is punctuated only by the liquor
stores, the race track, and Camden's strip show palace
proudly proclaiming on its thirty foot high sign:
"PARKING FOR BIG-RIG TRUCKERS IN REAR". As you drive
further, the pattern gives way to additional miles of
suburban sprawl: square-lot sub-divisions imposed in
grid form with scant regard to the topography. Each
detached house is related to its neighbour primarily in
the apparent desire to be unique, resulting in a visual
chaos whose only unifying feature is the life size
'bambi-deer' which graces every front lawn.   The
intensity of development gradually diminishes a little
and is interspersed by a couple of suburban
shopping-malls: enormous concrete boxes set in a sea of
tarmac.

Then comes an abrupt change: fields and woodland dotted
with occasional restrained residential units set well
back from the road. You suppose that finally the
outermost limit of the mass exodus of mobile middle class
families from the crumbling inner city has been passed.
Not so: you have arrived in the semi-rural Township of
Medford. Pass beyond Medford and you will once again hit
strip development par excellence albeit of a more rural
character.

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currently enrolled on a Master's course in the Department
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Pennsylvania.*

The State of New Jersey is divided into counties, which
are in turn split into townships, each of which forms an
essentially autonomous political unit with regard to
zoning and planning regulations. In response to the
anticipated land development boom, the 1920's Federal
Government Statutes were established. These gave basic
zoning and building type guidelines to municipalities
nationwide. Each municipality, and in New Jersey's case
each township, developed these guidelines individually.
The only requirement was compliance with certain health
and safety standards.

It was the realization in the late 1960's, by Medford's
political leaders, of the need to grasp the nettle of
development control firmly, that led to the dramatic
difference readily perceived in the landscape today.
(That existing conventional zoning and ordinances were
inadequate to deal with growing development pressure was
clearly evident in the transformation of townships closer
to the metropolitan region).

Landscape history

Medford Township is about twenty miles east of
Philadelphia and seventy miles south of New York, on the
fringe of the northeast metropolitan corridor. (Fig.1)
It lies on the divide between the inner and outer coastal
plains, which together stretch from the Appalachian
piedmont to the Atlantic coast, comprising various
geological formations of unconsolidated sediments. The
principal distinction between the inner and outer coastal
plain is that the sediments of the inner have
significantly higher clay content; the outer
predominantly composed of coarse grained quartz sands.
This divide is reflected in the pattern of soils,
hydrology, vegetation and land-uses of the area.

The landscape and land-use patterns evident in the
Medford area today have been influenced by man's activity
over many centuries. In pre-colonial times the majority
of the area was covered with forest; mixed deciduous on
the inner coastal plain moving to pine-oak and pure pine
stands on the acidic outer coastal plain. Changes of the
environment by man were small, the Indian culture being
based on a symbiotic relationship with nature rather than
an overtly exploitational one. The lasting influence of
this era was the establishment of communication corridors
"trading trails", still evident in the road and
settlement patterns today.
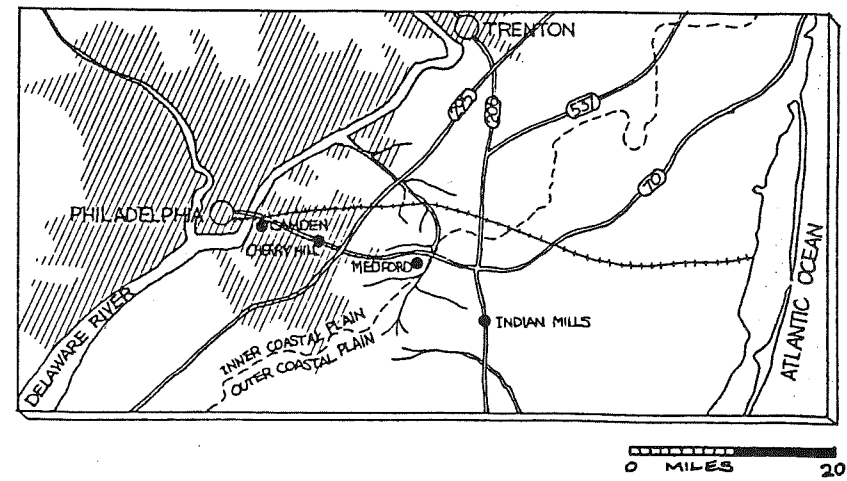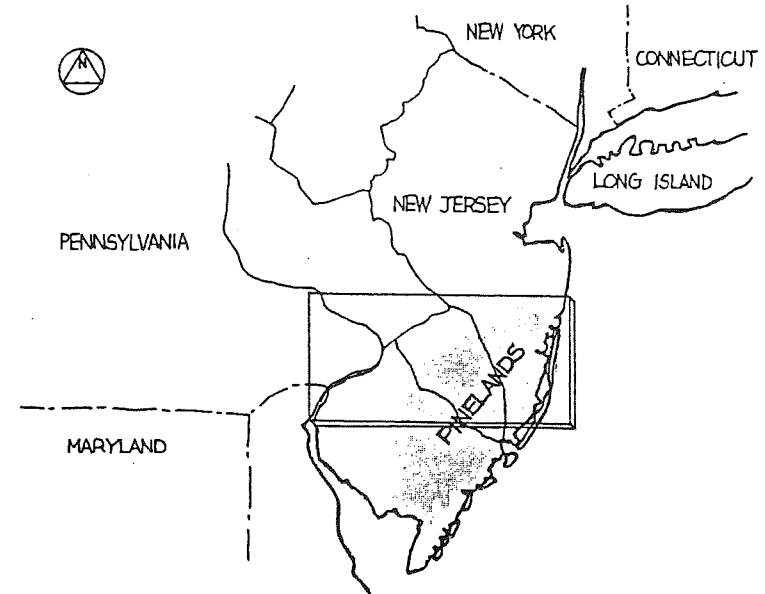
REGIONAL CONTEXT

Figure 1.

The eighteenth century was marked by the arrival of
colonial settlers, predominantly English Quakers. They
began the process of clearing most of the forest from the
land to make way for agriculture, especially on the more
fertile inner coastal plain. Commercial activity in both
lumber and charcoal furthered this lasting effect.

The nineteenth century saw the growth of local industries
which accelerated the removal of forest from the
landscape, but by 1900 the local industrial economy was
already in decline.

The advent of the automobile in the early twentieth
century and the attendant development of the road network
marked a dramatic change in the landscape surrounding the
metropolitan corridor. The attractive rural character of
areas such as Medford was quickly perceived as a
marketable resource by suburban developers and by the
1920's the land development boom was on. Growth reached
out eastward from Camden consuming the countryside in its
march toward Medford. Such uncontrolled development
worried many of the residents who feared that the scenic
qualities of Medford which they valued so highly would be
overwhelmed by the concrete and tarmac which had already
swallowed up Cherry Hill. By the 1970's the population
in Medford had reached around eight thousand (Fig.2),
each new wave of residents quickly adopting preservation
of 'their' scenic environment as a defence against
further development; a clear case of the 'last-in'
syndrome.

Early land-use planning

In the absence of established systems ensuring some
continuity, the planning process in townships such as
Medford is subject to those in power at any given time.
Two key actors in Medford's political history can be
clearly identified as primarily responsible for its
adoption of more stringent development control with a
longer term view than typical for other townships in
similar circumstances. Mayor Tomlinson had been born and
raised in a Quaker farm community in the region between
Philadelphia and Medford. Having seen his home community
overrun by development he moved to Medford and set about
preserving it from the same fate. Gerry Haughey was a
lawyer with a particular interest in land-use planning.
He had completed extensive research into planning law in
the UK, and returning home after a period of residence in
Suffolk was shocked by the development which had occurred
during his absence. Mayor Tomlinson appointed Haughey to

= 10 thousand
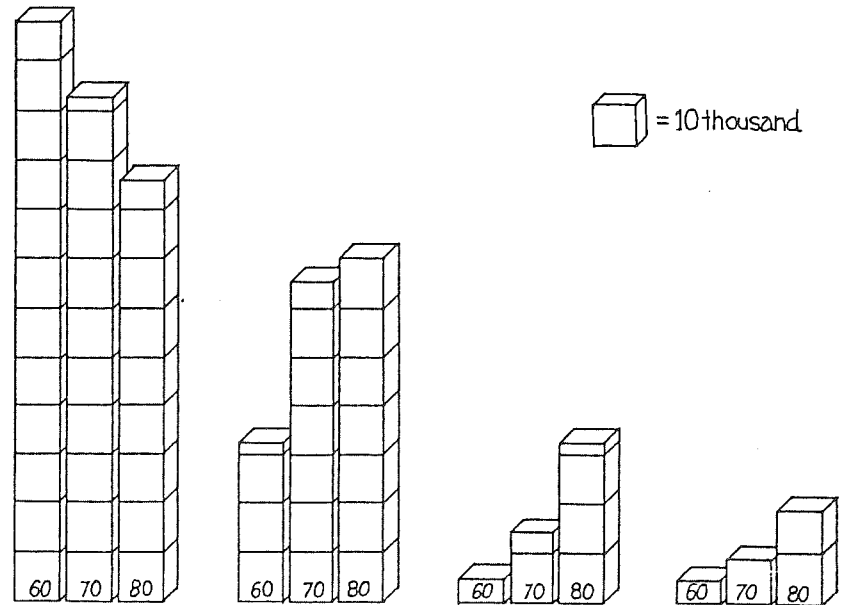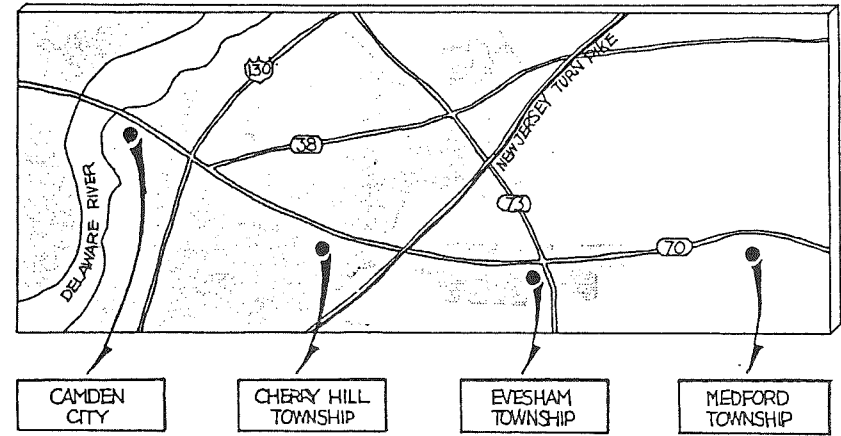
CHANGE IN POPULATION
1960-1980

Figure 2.

the Medford Planning Board.

At about the same time, Ian McHarg, the noted environmental planner and designer, was actively promoting a new approach to planning based on environmental suitability. Haughey read McHarg's book 'Design with Nature', and realised that suitability analysis could provide a 'police power function'; that is, provide the legal teeth required to develop enforceable land-use planning legislation. Haughey and Tomlinson persuaded the Township Committee to contract McHarg and his colleagues at the University of Pennsylvania to develop an ecologically-based planning study.

The study team, led by Narendra Juneja, was composed of experts in the environmental sciences and ecological planning. Having completed an inventory, and mapped the natural resources of the Township, the study identified and articulated the value ascribed to these resources by the Township population. Finally, a series of plans were produced which synthesized the above information, each attached to a set of scientifically-based recommendations which could form the basis of land-use ordinances.

By the late 1970's the Medford study was effectively implemented in the form of ordinances and zoning contained in the Township's masterplan. Since that time there have been a number of significant developments which have an important bearing on the future of Medford, and on an assessment of the value of the Medford Study to planning in the US.

Administrative changes and their consequences

On November 8th 1977, a Charter Study was commissioned by a mandate of the electorate to study the form of government in the municipality. It was their recommendation that the township should change from a committee form of administration to a council-manager system. Under this form the council held legislative authority whilst administrative and executive authority is placed in the hands of a manager. The manager was appointed by the council and was subject to them, so in theory the chain of democratic control extended to the manager. The proposed change was adopted in 1980 and undoubtedly led to increased efficiency, which was one of the primary reasons put forward for the change.

In looking back, however, it is clear that the change

coincided with a shift in the complexion of control in Medford towards a more pro-development stance. The reasons for this changing 'climate' are hard to pin down. Some have questioned the conflict of interest represented by some of the council members. It is certainly true that R.Meyer, who served on the Council, had significant personal interests in development. However, it seems unlikely that this really explains the phenomenon and there is an informal system operative today which excludes people with an obvious conflict of interest from holding a position on the council.

With regard to the change in political structure from committee to council, it is true that the control of Medford has moved one step away from the population at large. It is also generally true that a manager tends to look more toward the short term, particularly to annual budget returns, than might be the case with a committee of residents. Both these factors have probably played some part in the shifting attitude of control.

There are probably, however, two main reasons for the shift towards development and neither are connected to the change in the political structure. Both are really concerned with time. Firstly, there has been the retirement of many committee individuals from the political arena. Neither Tomlinson nor Haughey play an active role in Medford's control today and many of those who do were not involved in the process of commissioning the Medford study and effecting its implementation. Secondly, there has been a change in the overall population. The influx of people from outside the township in recent years has changed the aggregate opinion of the popular vote. Again, these 'newcomers' have not been through the formative experience of the Medford report which older residents hold as having influenced their perception of their environment. Many of the newer residents only seem concerned about development when it is going to occur next to their own plot.

Letters to the editor printed in 'The Central Record', (Medford's weekly local paper), clearly indicate a growing dissatisfaction with the council's changing attitude to development:

"It seems to me that the residents of Medford ought to become very concerned about the future of our community and, in particular, about the people who are in control of that future...There are at least three local

developers who seem to have our Township Government completely subservient to their wishes. Now, in spite of widespread public opposition, vast new areas of our woodlands are being opened to intensive development". (R.P.Stebbins. 6 November 1986).

"The last meeting of the Zoning Board on the 21st of this month proved once more that our local government is not responsive to the wishes of the residents of Medford...Our township is well on the way to being another community swallowed up by the insatiable appetite of the land speculator". (J.Knazek. 30 October 1986).

(It should be noted with regard to The Central Record that the editor is Pat Haughey, wife of Gerald Haughey, and is personally biased to the old point of view).

Natural factors

A second major change in recent years was the adoption on November 21 1980 of the Pinelands Commission Plan. The New Jersey Pine Barrens is a region of pine forest on the outer coastal plain, which both features unique eco-systems and also serves as a vital recharge area for aquifers underlying Camden and Philadelphia. The Pinelands Commission Plan represented the culmination of long term efforts at local, state and federal levels to protect that area's special qualities. About half of Medford Township is included in the area now subject to control by the Pinelands Commission; that area south of Route 70, roughly the extent of outer coastal plain in Medford. For Medford this has been a positive event in terms of adding to the battery of armaments arrayed against uncontrolled development.

In spite of this, the effects of the Pinelands Commission on Medford have not been all positive. The mechanisms of legislative endeavour generally include political 'co-operation' between various parts of the bureaucracy, in this case the New Jersey legislature. With regard to the Pinelands Commission Plan it would seem that a back-room deal (undocumented) was struck between the Department of Environmental Protection (DEP), the department 'responsible' for the Pine Barrens, and the Office of the Public Advocate (OPA). (The OPA represents various underprivileged groups of society, otherwise unrepresented at the State level). At the time that the Pinelands Plan was being prepared, affordable housing was a particular concern of the OPA. In the unofficial deal it seems it was agreed that the DEP would ensure that the

potential housing lost by the restriction placed on development within the Pinelands preservation zone would be compensated for. This would be achieved by each township on the fringe of that zone incorporating areas earmarked for such development in their masterplan. In Medford's case this resulted in the Reserve Growth Districts (RGD's) in the 1982 masterplan. In return for this the OPA undertook not to obstruct the passage of the Pinelands legislation. So it has transpired that for Medford the Pinelands Plan has been a double edged sword, on the one hand providing controlling legislative power, but on the other significantly increasing development pressure within the Township.

The pressure represented by the RGD's in Medford is magnified when one realizes the nature of ownership patterns within those areas. Much of the land is held by speculators and developers. (It is often difficult to ascertain the ownership pattern as speculators with substantial holdings often register different parcels of land under separate corporation names both to disguise the extent of ownership and probably to avoid taxation). One such speculator is a man named Samost who owns considerable parts of the RGD's. Some observers have suggested a link between the ownership patterns of land within Medford to the spatial definition of the RGD's but this remains unproven. However, it is certainly the truth that those ownership patterns also significantly increase development pressure.

The primary natural controls in Medford have to do with water, both the provision of drinking water and the disposal of domestic sewage. In the past the latter in particular has tended to produce a geographic definition to development patterns according to soil's ability to accommodate septic sewage systems, and their position relative to aquifer recharge zones. However, it is now the case that potential property values for developed land are so high as to allow technological solutions to this problem to be fiscally viable. Specifically, the sale value of new residential development can encompass the costs of installation of piped sewage disposal, negating the natural control of soils ability to process excess nutrient loads. This is manifested in Medford by the granting of density variances, (allowing a higher number of units per acre than the masterplan zoning would allow), to developers who are prepared to install sewer mains to new development. Presumably the Township government feel they are getting a good deal, with the developer paying to extend the Township's infrastructure.

Whatever the rationale, the extension of sewage infrastructure is adding further to development pressure.

Conclusion

Medford is unique in that it is one of few places that has fully utilised the type of environmental suitability analysis proposed by McHarg. As applied in Medford it has in most respects been a success to date. There is no doubt that the Study has provided and continues to provide the legally enforceable backing to planning regulations in the township.

However, it is only a method; a tool. It is subject to the planning or design process within which it is utilized. In the North Eastern USA it can only be effective while there are individuals in power who are committed to realizing such a study's recommendations and seeing them enacted into law at the level of the local municipality. In Medford, careful control was the characteristic of development as long as those who commissioned the report stayed in power. With their political retirement, the nature of development control in the township has altered significantly.

This highlights a dramatic shortcoming in the nature of planning control in the USA. There is no overriding legal structure ensuring some continuity in the planning process or requiring a co-ordinated masterplan accounting for the social and environmental needs of an area. In recent years the climate in which 'planning' has to operate has worsened with the current Federal administration's dogmatic adherence to breaking down any public structure that smacks of 'Big Brother' interfering in the constitutional rights of the private sector to muster profits.

Just as any planning system is subject to the fickle nature of the political wind, it is also likely to be manipulated to serve the interests of those in power. The Medford case illustrates how those in power will tend to use planning control to move their area in the direction they feel most appropriate. For example, the affordable housing requirement foisted onto Medford as a result of the Pinelands Plan implementation was and is perceived by the predominantly white, wealthy population of Medford as a threat to the town's character. The Township's politicians have utilised the environmental standards established by the Medford Study to maintain such low density regulations that affordable housing has

been effectively prohibited.

America has such a vast land resource that many of the pressures related to development already felt for many years in Britain are only just beginning to be perceived. Environmental issues are seldom respecters of man's arbitrary political boundaries and the system of localised autonomous planning units is proving increasingly inadequate in the face of more intense problems. If the recent history of development control in Medford speaks of anything, it is surely of the need for a planning structure that transcends geo-political boundaries, the concerns of the annual budget, or the lifetime of a single political administration.

1986 DISSERTATIONS: BA (Landscape),Gloucester

The following is a list of the successful degree dissertation submissions for 1986. 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, Lindsay — A sense of place? The modern approach to the character of civic squares.

BROWN, Susan — Design to manage, or manage to design? A study and discussion of level of interaction the new role of landscape manager could, or should have with the landscape architect to achieve their total aim.

COOK, Deborah — A future for ecological landscapes in the city.

CRAMP, Simon — Urban landscape conservation: the state of an art and its future.

GREAVES, Alexandra — Marine and rural coastlines: their potential for visual reconciliation.

HAWKINS, Matthew — Landscape architecture and urban studies: how and why the landscape architect should have been involved in the Art and the Built Environment project.

HUGHES, Roland — Man and wildlife: their coexistence in the future agricultural scene.

HUNOT, Kevin — New British hardy plants: plant collections as a resource for extending the range of non-native, hardy plants used by landscape architects in urban public open space schemes in Great Britain.

INGRAM, Jillian — The protection of historic parks and gardens in England: a survey of their present day role in Gloucestershire looking at the relative success of alternative uses, the implications of official listing and the potential for ungraded sites.

JONES, Vivienne — A new sense of design: multi-sensory design in landscape architecture.

LEE, Oliver — Changing attitudes to exotic trees in Britain: a study of the sycamore, an exotic with a controversial reputation in the contemporary landscape.

MOORE, Deanne — Planting with a purpose: the herb and its application to public landscape scenes.

PARSONS, Jonathan — The modern office atrium: approaches to planting.

RISDON, Matthew — The garden of allegory: an exploration of the levels of meaning in garden design, and an assessment of the role of allegory in modern gardens.

ROBERTS, Julie — The design and location of visitor information centres, with reference to the Snowdonia National Park.

RYDER, Myfanwy — Interior planting design: who should do it.

TODD, Jonathan — Present and potential uses of urban wasteland, with particular reference to Birmingham.

WESTERN, Dianne — Bridging the landscape: an exploration of the relationship between the road bridge and the landscape, the potential role of the landscape architect in its fulfilment.

WHETEN, Rebecca — Herb-rich grasslands: their potential for re-introduction into the landscape.

BOOK REVIEW

TREE FORM, SIZE and COLOUR, by Bodfan Gruffydd, Published by E.& F.N. Spon 1987.

TREE FORM, SIZE and COLOUR by John St. Bodfan Gruffydd is, as the sub-title states, a guide to selection, planting and design and will be invaluable to both the plant specialist, as a concise reference "index", and to the non-specialist planting designer, as a "bible", making possible a rapid selection of suitable material by using a few leading characteristics in a simple classification system. The book lists by name (both common and the latest botanical name) some 300 species and varieties giving detail of size, main colour, shape (broad, narrow, conical etc.) deciduous, evergreen, etc. together with growth and environmental factors, including very useful information on suitable planting distances and possible danger by roots to building foundations.

The book contains too few colour plates. In addition, the reproduction of some of the author's original excellent black and white photographs leaves much to be desired but generally the illustrations are sufficiently clear to remind an experienced eye of the form and nature of the specific tree. The selection of plant material described has been made by the author from his long experience with particular trees – many of which were planted by him and observed over the years – and anyone using this book will have at his disposal a lifetime of tree experience as recorded by a leading landscape designer.

With the exception of some of the black and white photographic reproductions, the Publishers, E. & F.N. Spon are to be congratulated on producing an excellent high quality reference book which will, I am sure, find its way into the libraries of most English speaking Landscape Architects and environmental designers. For the student it has much to commend it. It is a concise practical reference text arranged in such a way as to allow a sensible choice of well proven planting material in most site situations.

John Simpson,
School of Landscape Architecture.
GlosCAT

LARGE TREES

	Name	Siting and display	Density, reflection, surface pattern	Rate	Soil preference	Position	Air	Soil	Ultimate spacing in metres	Notes
Light green	*Ulmus carpinifolia* 'Sarniensis' Jersey Elm	Specimen; elegant, upstanding branches barely clothed with foliage	Open, shiny, pilose	Average	Loams, clay	Any	Resists smoke and salt	Lime tolerant	14	Gross feeder and bad neighbour; closely resembling Cornish Elm
Yellow green	*Chamaecyparis lawsoniana* 'Lutea' and similar clones Golden Lawson Cypress	Sheltered background, specimen; furnished with foliage to the ground	Loose, matt – ferny	Quick	Any	Any but shade	High rainfall	Lime tolerant	8	Retains root disturbance; young pot-grown or regularly transplanted trees should be planted carefully; hardy
Yellow green	*Gleditsia triacanthos* Honey Locust (p.78)	Specimen, graceful, airy effect; autumn colour yellow	Loose, shiny, feathery	Slow	Sandy loams, clay	Sun	Smoke tolerant, SO₂ tolerant	Lime tolerant	14	Armed with formidable spines; full performance in south
	Pinus sylvestris 'Aurea' Golden Scots Pine	Background, specimen; foliage golden in winter	Loose, matt, bristly	Quick	Sandy loams	Any but shade	Withstands wind and some SO₂ and climatic extremes; cold districts	High rainfall; acid and lime tolerant	9	Useful for furnishing
Grey green	*Abies pinsapo* Spanish Fir	Specimen; growth in circling tiers	Loose, matt, scaly	Quick	Loams	Any	Dislikes late spring frost; cool districts; high rainfall	Lime tolerant	8	Young trees transplant but
	Betula pendula 'Dalecarlica' Dalecarlian Silver Birch	Specimen, very white trunk, cut leaves in pendant plumes give elegant and graceful effect	Loose, shiny, lacy	Quick	Well-drained loams, poor sandy, clay	Any but shade	Stands some SO₂ and smoke		14	Useful for furnishing arid situations
	Cedrus atlantica 'f. glauca' Silver Atlas Cedar (p.80)	Specimen; assurgent growth, becomes layered in stiff horizontal fronds, flat-topped with age	Loose, matt, mossy	Average	Loams	Open	Tolerates some salt and smoke	Lime tolerant; withstands drought	16	Specimens should be chosen for colour and planted young 1.2–1.8 m (4–6 ft) high to develop naturally
	Picea spinulosa Sikkim Spruce	Specimen; symmetrical form, streaming dependant branches	Loose, shiny, bristly	Quick when established	Moist loams	Any	Dislikes over-exposure; high rainfall	Lime hating	8	Owing to slow early growth trees about 6 years old may be planted shallow
	Picea sitchensis Sitka Spruce	Background; specimens in groups; beautiful when mature	Loose, matt, bristly	Quick	Wet loams, clay	Any	Dislikes over-exposure	Lime hating; bogland or sandy	8	Very useful for furnishing bogs

INFORMATION FOR CONTRIBUTORS

LANDSCAPE ISSUES publishes articles and reports on aspects of landscape architecture and landscape education. Manuscripts should be submitted to the Editor, in duplicate for refereeing, typed on A4 sheets with ample margins and bearing the title of the paper together with the name(s) and any affiliation(s) of the author(s). A high scholarly standard is expected, and normal conventions for references, illustrations etc. should be followed. Footnotes should be avoided. Further details will be supplied on request. Although there is no strict limitation on the length of articles, 3-5000 words are preferred. Reports are much shorter and cover matters of topical interest; for example, specific design projects, research seminars and dissertations. Illustrations are welcome: diagrams should be neat and clear; photographs should be black and white or, if colour, of suitable clarity for reproduction. Copyright is held by the authors of all work submitted. Articles may contain views which do not coincide with those of the Editorial Board.

PARTING WORDS

It is with regret that the School of Landscape Architecture in Gloucester has to report the loss through early retirement and a return to practice of two of its members of staff who have served the School for a number of years.

Aylwin Sampson ("Sam"), for many years the subject leader in Verbal Communication and the person most responsible for the consistently successful running of the major written project of the degree course, the dissertation, has taken the opportunity to leave the College to devote more time to his various interests in the fields of art, music and writing. Alan Pinder will be most remembered for his work as first-year tutor, particularly for the invariably high levels of commitment and achievement he was able to encourage in the students. We wish him well in his new landscape/architectural partnership established in the Cotswolds.

Neither Alan nor Sam have severed all connections with GlosCAT. Alan is still involved in teaching on the Design in the Built Environment course and Sam continues to offer invaluable editorial support in the production of this journal.

LANDSCAPE ISSUES

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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DESIGNS ON VIDEO

JUST WHEN WE THOUGHT we had come to terms with computers and all things digital, we now find ourselves being driven into the complementary, but quite different, technology of video systems and laser disks. Video technology is not new of course, being the basis of much we see on television, but what we are currently witnessing is the emergence of video from the complexities of the broadcast studio and its new applications in the home and for the professional. With the simplification in the use of the equipment and its general (relative) reduction in price, it is now being widely promoted.

Video is, simply, the recording of visual signals in an analogue wave form, as opposed to the digital form of computers. Played back this wave code is converted to a television screen display, the 625-line image being created in a fiftieth of a second. Compared with film or paper print the picture is somewhat coarse, but with 300 frame changes in 12 seconds and with the accompaniment of an audio signal realistic animation film is ensured.

In the field of education video has a notable history. The advantages of communicating in sound and pictures has long been recognised. Consider the wide use of teaching and training programmes in schools, colleges and at home. Today the video boom is centring on the leisure industry: video movies, television programming and graphics, satellite transmission and cable television, and pop music promotions.

In landscape architecture and other design disciplines, there seems to be now developing what could be termed Video-aided Design (VAD), which is essentially the direct application of video technologies to solving design problems. Video, as Betsy Boehm Hsu states in a recent issue of Landscape Architecture, can portray movement, depth and changes in time or environmental patterns and it can monitor the effects of implementing a design.

At a simple level it is an ideal medium for recording information about project sites: the panning of scenes can be more effective than still photo montages, the zoom facility allows selective focusing within views, and a simulated walk or tracking through the site adds a dynamic realism. At a more advanced level, visualisation based on the use of scaled physical models and video camera linked to a modelscope can be used to record design solutions. Recent experiments at GlosCAT have confirmed the value of such a system in assessing visual impact in urban design, and have simultaneously revealed its creative potential for concept presentation: forms and colours display distortions, simplifications and artistic effects not evident through other graphic constructions.

The use of computer-enhancements to the video films produced in this way is seen as a natural development of the technique. Already a number of students have used a high resolution colour graphics computer workstation (Pluto) to produce designs based on frame-grabbed images using a video camera. These designs can be saved on video tape and replayed, complete with added soundtrack, as a part of the project presentation.

Another development involving video is described in an article in this issue. Interactive video (using a computer program to retrieve video images) has wide applications and GlosCAT's collaboration in the production of a plant database for use by horticulturalists and landscape architects, both in training and practice, is seen as a valuable contribution to the landscape industry.

Can video be promoted as the ultimate landscape design technique, rather in the same way the computer was heralded some years ago? Can it improve design analysis, evaluation and communication? It has been argued on these pages in a previous issue that designers have, at least, to be aware of such technological developments but should, preferably, take an active role in the innovations to ensure that electronic media are fully understood, manipulated and controlled by them. Indeed, as Betsy Boehm Hsu concludes, video as the three-dimensional "moving book" is here to stay.

LITTLE THINGS, RIDICULOUS THINGS

Martin Spray

THE CHINESE, AS USUAL, HAVE EXPRESSED it with succinct cogency:

> If a man would be happy for a week, he can take a
> wife; if he plans happiness for a month, he must
> kill a pig; but if he desires happiness for ever,
> he should plant a garden.

Given that The Garden, occidental as much as oriental, is, with music, poetry and mathematics, at the summit of cultural achievements, and given that it is a manifestation of desire in space, it seems odd that we (and in particular the designers of landscape) have so small an understanding of it. Odd, indeed, that we seldom acknowledge its special significance. It is

> ... a miniature endeavour
> To hold the graces and the courtesies
> Against a horrid wilderness ...,

wrote Vita Sackville-West, during the cultural shade of the Second World War (1).

Now; there are, if we leave aside the plantless ones, and those intended to be eaten, two kinds of garden. They grow, it seems, from different minds, from different intentions, from different needs.

One kind is 'a place in which plants are grown'. Here, each resident is known, is seen and is befriended. The other kind is a place composed of plants. A sort of 'landscape', one might say. Here, individual plants, unless they are large or deliberately called 'specimens', are lucky if they get an occasional nod of recognition: they are merely articulations in the forms, spaces,

Martin Spray is biology and dissertation tutor in the School of Landscape Architecture, GlosCAT, edits Ecos: A Review of Conservation, and has a fondness for ridiculous things.

relationships and compositions striven for, and admired as such. It has long seemed to me unfair that the latter sort is commonly and openly admitted to be the result of design, but that the former seldom has that recognition. (Or, perhaps, it is wrong to call these gardens designed; perhaps they result from finer processes. It has been appositely remarked that

> it would never occur to gardeners to write a poem or
> paint a picture. Most gardens are the only artistic
> effort their owners ever make.(2))

For those who walk...

Ruskin gives us a clue to the situation I want to address, when he points out that

> there was always more in the world than men could
> see, walked they ever so slowly; they will see it
> no better for going fast.

I prefer gardens that require a slow pace. My objection to many is that they are so lacking in detail that they have to be seen quickly to be pleasurable. So it is with many designed landscapes that are not gardens.

Of course, whether or not such detail is there is irrelevant to many users of landscape. Edward Ralph has repeated the thought that we are producing most of our landscapes for forty-year-old males driving cars(3). For 'landscape' read backdrop ...

We form our personal fondnesses early in life; and my own likings for wide open moorland and (in some respects) large conifer plantations are traceable to early, pleasant, influences. Both these instances demonstrate the point that in many apparently bland and monotonous scenes, detail can be found if looked for carefully enough. It is there, for instance, in the richness of lichens and mosses understoreying heather moors; it is there (the ecological and political insolence notwithstanding) in the cathedralic spaces under a tracery of Sitka spruce; it has been enjoyed, even, by men dying in the ice wastes of the Antarctic plateau. Sometimes, such detail is small and subtle; but I find it important in supplying interest in a place,

> And little things, ridiculous things, shall move me
> To smiles or tears or verse ...(4)

But does it smell right?(5)

In contrast — in contradiction — to this, in many of
the manifestations of designers' drawings one doesn't
find detail. It isn't there. It is not supposed to be
there ... Here, landscape and architecture have fallen
together into the same pit: they have forgotten not only
that a whole is more than the sum of its parts, but also
that without parts there is no whole. It is as though
many landscape architects (and architects) actually
believe in the smooth, bland, separate and simple shapes
they prepare on the drawing board: believe they can be
transposed to the ground, and there will stand as whole
and wholesome structures; that they will satisfy people.
Satisfy smooth and bland and tidy-minded people they may;
but many they do not.

In part, it is the folly of the drawing board. This
can to some extent be overcome by raising one's
inspiration into a third dimension, and seeing a model of
one's thoughts. But this is not landscape — it is not
how landscapes are composed. Landscapes smell; they
rustle in the breeze; they have butterflies brazenly
dancing about them and caterpillars hiding within them.
They have all manner of little and ridiculous things.
They allow (they should allow, for it is one of their
most impotant contributions) serendipity — they are full
of "happenstance".

Landscapes are not experienced just by being seen. But
designers, unless for the blind, and sometimes with
water, almost never cater for senses other than sight.
Along with "How will it look?", we should be asking "Will
it smell right?" ...

> It's the lilac's scent —
> so I notice, and wake
> from my noonday nap.

> ──────────

> My wife holds
> a thistle — I feel its prickles
> in my hand.

> ──────────

> With a lizard
> that droops its head, I listen
> to the words of the sun.(6)

6

A better thing to do

In large part, of course, it is the folly of our
conditioning, of our expectations. We need a strong
excuse ("Because love is gone at length ..."?), to
declare, for instance:

> This year I shall love the rain
> And the dark leaves underfoot,
> And the rose tree stripped to its root,
> And the wind on my window pane.(7)

For such admissions, we do not usually cater. They are
not immediate, and cannot easily be drawn. But also, the
main reason: such things as rain, and leaves underfoot,
and wind on the window pane are not asked for, are not
wanted: we — people — think they are not needed. It is
almost as though people not only feel inconvenienced by
but are actually embarrassed by much of the detail that
nature offers.

> In the wind that blew last night
> peach blossoms fell, scattered in the garden.
> A boy came out with a broom,
> intending to sweep them away.
> No — no, do not sweep them away.
> Are fallen flowers not flowers?(8)

I may have given the impression that my interest in
landscape is in terms of 'The Great Outdoors'. This is
only partly so. Where missing detail is most lacking,
and where it seems most wanted, is in the intimacy of an
urban setting. Some of it is there —

> Who says the city street is empty or is quiet?...
> Roots beneath the pavement,
> pulse under the skin....—

yet not enough for some, and it is too often

> ...weed and blade,
> bird, leaf and creeping root,

Self-planted, not designed, that

> play Knocky Door Neighbour while we sleep
> and decorate the city
> in a covert reclamation.(9)

7

Nor is it found wanting only in terms of vegetation. Recently I have watched two 'environmental improvements' in the small, and decidedly unpretentious, town in which I live. First, in its centre, one set of paving blocks was lifted — and replaced by another more modern set. Close inspection has discovered little improvement beyond a somewhat more even surface. Second (and poignantly, since this occurred shortly after it was demonstrated to a group of landscape students visiting the town), a rusty lattice-work pylon carrying cables over a road has been cut down, and replaced by a pole. I would not pretend that the former was prettier than the latter — but it did have greater significance, being characteristic of the mining-town history of the place which the local council seems determined to blot out.

> And the lights come up
> On the black pit town
> Somebody says what's a better thing to do
> Well, it's not just me
> And it's not just you
> This is all around the world.(10)

Pole and pylon do the same job, but are not the same thing. We can find poles carrying cables across streets in Anytown. Pylons, we cannot. It is such details, particular details, not details from the catalogue or the Design Guide, that make for placeness. That last rusting pylon was part of its place: the pole denies history, and belongs to Anywhere. It is not just here that this has happened — this is all around the world.

Back to Serendip

Unfortunately, Society expects landscape architects to be implicated in these two linked processes: the stripping of place-markers, and the substitution of placelessness. The substitution, that is, of meaning-less, detail-impoverished landscapes ...(11)

Is it inevitable? I hesitate to write "Of course not!", but I am not alone in thinking not.

Although blandness and the Standard Detail still predominate (witness most of the work displayed in any issue of Landscape Design), there are some signs of meaning-full detail being expressed. Two, overlapping, sorts of example suggest themselves. Obviously, many attempts at 'naturalistic' landscape planting strive for

richness of detail— for without it they do not read as naturalistic. 'Community landscaping', in its various guises, offers more and more opportunities for both detail and meaning (the local relevance to and recognition by the users of a place) to be incorporated into work — although in too many cases detail is quickly lost because of incompetent implementation and maintenance.

These examples together are not sufficient, although they are encouraging. What is somewhat less encouraging, is the apparent lack of self- conviction by professional landscape designers: conviction that they can design with smells and rustles, butterflies and other ridiculous things, and that they can persuade their clients and their professional masters that such little things add enormously to a scheme. If this conviction is, or appears to be, weak individually — and, given the discouraging climate of social expectations in which an individual works in this country, this lack is not surprising — so much more is it wanting collectively, institutionally.

Alas, that in Britain we do not have the habit, found a little more readily in some other countries, of paying in better quantity for a better quality of environment ...; and yet, in some places, in some cases, we do. I am reminded again of gardens.

Landscape as Place

If more 'landscaping' (and much can not) took on the approach (not the character) that we bring to the designing of gardens, in particular that first class of garden which is as much eclectic as stylistic, almost as much parts as it is summated whole, then perhaps we would have one means whereby meaning and detail could be returned to places. For in such places we have (again, not in the character, but in the approach) a model of how some landscapes may be. Such places are, it is true, intended for use by specific people, and usually in very small numbers; that is, they are personal territory. But it does not follow that this territoriality has to be so personal: it can, without severe loss of integrity, serve collective needs. Witness many parks, some children's play areas, favourite countryside picnic sites, woodland walks and the like.

What seems to distinguish such areas, as seen in the ways they are used, is that they appear to be not so much 'landscape' as place(12). The word 'landscape' has for me come to have a particular connotation: it is too closely attached to its picture-image past; it is too much the result of Art; it is abstract, a little aloof, impersonal. It does not, for me, have the necessary implications of something live and lived-in, loved and loved-in. 'Landscape' does not convey the meaning that 'place' does. Maybe the very fact that it is produced by 'landscape architects', rather than just people, sets it apart — impersonally, like any imposition; for most landscape work is done for 'clients' who are not the people who will use the end product: this problem, too, we share with architecture.

Of course, I have stretched my reference to gardens way out of context, and too far to serve any purpose further. What we are concerned with here is collectively, even if selectively, used space.

However, like gardens, such space looks to be of two main sorts. Some, we see is the deliberate product of 'design'. Some, we do not. Indeed, what to a considerable extent distinguishes the latter spaces is that they are only in part, and commonly in small part, affected by 'design' as practised on the drawingboard. What manifests there is often itself happenstance; they develop eclectically; they evolve. Perhaps the conventional process by which 'landscapes' are designed cannot enrich spaces with detail, and cannot give them meaning. Only by having been lived in and loved (or loathed) in, can they become places — real places, in which people take an interest, and to which people show a reaction.

Perhaps there is something in the making of landscape architects that distinguishes, and divorces them (and other professionals) from the rest of humanity and the way it makes its places. Perhaps we have need to take the hint that Jennifer Farley offers (I forget where) to another part of the educational system, when she tells how

Before he went to school
he could read
the bark of trees,
leaf veins,
seashell-convolutions,
footprints,

and the touch of fingers.
Now he goes to school,
and he can only read
words.

Maybe we have made ourselves unconscious of ridiculous things.

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10. Paul Simon,' The myth of fingerprints',Graceland Album,1986.
11. 'Meaning' I have explored in 'Amor loci', forthcoming in Tears in the fence, No. 8.
12. I am following the distinction Yi-Fu Tuan makes between place and space. We explore our world outwards from places - which have meaning given by the "steady accretion of sentiment" - where we feel a sense of attachment and understanding, into space which is unknown, uncharted, uncharacterised. See his Space and place. The perspective of experience, Arnold, London, 1977.

INTERACTIVE VIDEO AND LANDSCAPE ARCHITECTURE EDUCATION

David Anderson

INTERACTIVE VIDEO (IV) is a new kind of publishing medium. It is the result of marrying the technologies of television (video) and computers. Information is held on a laser disc (or videotape) and is manipulated by a computer program. This information can be in the form of slides, moving pictures, sound, text and data. In addition the computer itself can process, combine and supplement that information in a variety of ways. The control given by the computer program enables exploration, experiment and individual questioning. It can also adjust what happens next by the responses given.

The features that give interactive video the potential of being a highly effective and "user-friendly" means of communication include its multi-media nature, flexibility in both the access to and handling of information, and the sheer quantity of information that can be stored with laser-based optical technology. But the most important feature is that it invites active participation, not, as is the case with television, passive onlooking.

Recent changes in educational practice are towards student-centred, "open" learning and self-paced skills training. The emphasis is now on what people can do in terms of competency, not just on formal academic qualifications. Interactive video has already proved its worth in helping to meet these new objectives: students using interactive video for training have shown high levels of success in a variety of tests, including retention rates over given periods of time. The medium seems particularly able to stimulate and motivate.

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It has proved effective in
   -training in manipulative and interpersonal skills
   -stimulation of real environments and situations
   -decision-making skills
   -displaying and marketing products or services
   -storing and displaying maps and photographs
   -presenting subject-specific topics, eg ecology

The rest of this article will look at specific applications of interactive video for landscape architects and describe in some detail one of the most remarkable projects so far completed, the BBC's Domesday Project.

THE DOMESDAY PROJECT

The Domesday Project provides an example of IV technology being used for a massive database. The project was initiated by the BBC to commemorate the 900th anniversary of the original Domesday Survey of 1086 and is an exhibition of Britain and the life of its inhabitants in the 1980s. It was published in 1986 on two laser discs. These hold the equivalent of 300 reference books or 1000 floppy discs. To see everything that is stored would take seven years, yet any single item can be found in seconds. Here is an outline of the content of the two discs:

The Community Disc

This contains the results of the "Domesday Survey" of local communities. Localities are defined by a 4 by 3 kilometre rectangular 'block'. For each block local people were asked to provide up to three photographs and twenty pages of text. Every Ordnance Survey map for the UK (including the Channel Islands and Ulster) in the 1:50000 series is included, and linked directly to the Domesday blocks. The central areas of larger towns are also covered in more detail by the Ordnance Survey 1:10000 series. The regional analysis consists of 40 by 30 kilometre maps with matched satellite photos and authoritative text articles, plus scaled aerial photos of locations within the map area.

The Community Disc can be used in different ways:
   -zooming in on a place
   -map walking (8 compass points recognised)
   -typing in the national grid reference number
   -typing in a place name (250,000 names recognised)

-typing in a descriptive phrase of a topic of
interest (eg "real ale pubs")

and the information is processed by:
  -obtaining the national grid reference of any point
   on any map (the precision of the reference is
   automatically adjusted to the scale of the map
   selected)
  -calculating the distance between two or more points
   (the unit of measure can be switched between miles
   or yards and kilometres or metres)
  -computing the area of any drawn shape (units can be
   converted as above)
  -printing or storing on a floppy disc any piece of
   text information
  -saving to disc "bookmarks" for any map or photograph
   including any annotations

The National Disc

This provides the "official" view based on data
supplied by government departments, national bodies,
research archives and other publications. The disc
includes 9600 data sets, 150,000 text pages, 5000 picture
sets, one hour of film footage and "surrogate" walks
around nine actual places plus the "Domesday Gallery".

The information contained on the National Disc can be
retrieved in three different ways, called "Find",
"Contents" and "Gallery":
  -by creating and selecting from personal "hit lists".
   These are made by typing in descriptions of
   interests
  -by using increasingly specific subject headings to
   "home in" on the topic wanted
  -by browsing through the Domesday Gallery until a
   suitable photo (or text) set appears

For "in depth" research, it is best to build a hit list
using the Find option. For ideas for suitable research
topics, employ the Contents option. For a general view,
use the Gallery option.

The Domesday Gallery displays photo sets and some text
articles in eight "rooms":
  -popular arts and crafts
  -society, education and politics
  -fine arts and architecture
  -royal heritage

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-consumerism and fashion
-sport
-daily life
-natural environment

All the items on the disc have in fact been classified
under four main headings: society, economy, culture and
environment; and appear in one or more of six forms:
  -photograph
  -text
  -walk
  -film clip
  -mappable data (single variable)
  -tabular data (multi-variable)

Information can be processed by
  -printing (or saving to floppy disc) any piece of
   text information
  -saving to disc "bookmarks" of any map or photograph,
   including annotations
  -redefining and redrawing any data set, saving the
   results of the analysis to disc
  -undertaking statistical analyses of mappable data
   sets

Landscape applications of Domesday

The landscape user will be particularly interested in
the National Disc's environmental coverage: this splits
into fifteen separate groups, each of which has many
subdivisions:
  -agriculture (88 subdivisions)
  -climate (11)
  -conservation (10)
  -environmental pollution (28)
  -forestry (12)
  -geology (19)
  -industry in the environment (47)
  -landscape (31)
  -people in the environment (39)
  -planning issues (9)
  -soils (11)
  -seas (6)
  -urban environments (17)
  -water resources (14)
  -wildlife (52)

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To take just one of these as an example, "Landscape"
includes:
    -land altitude and relief (mappable datasets)
                -land altitude
                -land slope
                -land area
    -land cover types (mappable datasets)
    -land ownership (tabular datasets)
                -ownership of farmland
                -military land holdings
                -private estates
                -freehold/leasehold
                -common land
    -landscape change (text)
    -landscape design (photographs)
    -landscape types (mappable data, surrogate walks,
     photographs)
                -coastlands
                -lowlands
                -uplands
                -hills
                -waterscapes
                -rural landscape
                -remote sensing surveys
                -Ordnance Survey mapping
    -natural geographic regions (mappable datasets)
    -rocks and landforms (text, photographs)

   The power of this interactive database for the
landscape user is enhanced by three extra pieces of
computer software. Briefly, these are:

Domesday Display

   This is a package of two floppy discs, "Presenter" and
"Captions" with seven resource booklets, including one
specifically aimed at GCSE environmental studies.
Presenter allows storage of the results of the research —
analysed maps and charts, plus photos or text — in any
desired sequence for presentation or project work.
Captions can produce a slide show of up to 200 photos
together with captions of up to four lines per photo.
This will enable a landscaper to provide, say, a
customised tour as surrogate walk, a narrative of the
geological photos, an explanation of man-made or natural
features or processes described by the Domesday disc.

Datamerge

   This allows the user to supply his or her own data and
combine it with data already present on the discs. These
data can be analysed in chart and correlational forms.
They can be displayed against background maps or can be
entered on a grid basis using the Ordnance Survey maps as
a reference.

Other developments

   The BBC is planning a series of Domesday-type discs.
These either extend the coverage of the initial two
volumes directly or extend the format to other topic
areas. As an example of the latter is the "Ecodisc".

   Using the Slapton Ley Nature Reserve in Devon, the aim
of Ecodisc is to discover the inter-relationships between
organisms and environment in order to explore the concept
of environmental control. The user has to take on the
(temporary!) job of manager of this nature reserve and
draw up a ten-year plan of management based on data and
pictorial evidence concerning its present conditions. In
taking sensible decisions for this plan the user is able
to collect the opinions of experts and pressure groups.
Each interested party makes a case for their own position
— once a decision has been taken their reactions can be
evaluated and plans can be modified accordingly.

   The reserve contains three related habitats: lake,
reedbeds and woodland. The disc's software allows use of
several of the standard ecological sampling methods to
measure the distribution and population size of key
species within these habitats. The habitats can be
explored by Domesday-type surrogate walks, with the
additional features of being able to flick between winter
and summer conditions, plus moving from ground level to a
helicopter view 100 feet above.

   Electing to "watch" will present the user with various
data projections of the expected natural changes in
numbers of plants and animals for any five-yearly time
slot over the next fifty years. Background information
is also available for detailed text explanations and
photographic identification of any particular plant or
animal.

Gloucestershire's Contribution

Over the past three years GlosCAT has built up a resource of seven interactive video workstations together with a growing range of programmes. There is now an involvement in projects that use IV in environmental education: one project involves film and descriptions of the cultural details of trees, including a self-paced tour of an environment containing them and a self-test session. This has been developed as a student project using videotape.

In the most significant project to date GlosCAT is the junior partner in a "Local Collaborative Project" with the Gloucestershire College of Agriculture and Intersearch Systems Ltd. This is a £40,000 venture to provide an interactive database for use in horticultural training. Support is coming from the Manpower Services Commission, Jardinerie, Gloucestershire LEA and the Agricultural Training Board.

The context for this project is Intersearch Systems' point of sale promotion disc for the garden centre industry. This disc records 1500 plant, pest, weed and disease pictures together with forty short video sequences covering a range of cultivation tasks. It also contains a database of plants that can be accessed by common name, botanical name and growing conditions.

The College of Agriculture's intention is to replace and extend the video material to illustrate specific horticultural skills. GlosCAT's contribution is to develop the the plant database to the point where all common plants, trees and shrubs specified by landscape architects will be included. The "Plantfile" system originally conceived by Ron Sidwell (see Landscape Issues, vol 1(2), November 1984) will provide the basis for this. The programme as a whole will be flexible and offer several routes through the material.

Interactive, self-paced learning modules will be available for a variety of users: in garden centres, staff will be offered training at a variety of levels of detail and at times convenient to the company and trainee; YTS and other horticultural students will have an attractive, rapid system for learning and revision; landscape students will have a sophisticated means for selecting specific plants against particular criteria.

CONCLUSION

Obviously the possibilities for interactive video in landscape education and practice go far beyond the applications described above, or, indeed, what is currently available. For example, twelve inch video discs can hold up to 110,000 still images (maps, plans and slides, say), plus in the Domesday-type format (LV-ROM) some 650 megabytes of data. This gives the potential for massive archives of design projects and actual environments. A five inch disc (known as CD-I) will be able to store 550 megabytes of digital information, which can be any combination of data, text or still images. This might be used to record complex environmental data and conditions (eg ecology, meteorology), permitting individual analysis and study.

There is much educational mileage to be had from the cheap, videotape-based systems: tutors and students alike can readily produce their own materials in this way. The only real limitation is people's imagination — many creative concepts for landscape education are certainly realisable with interactive video.

THE INTEGRATION OF INSIDE AND OUTSIDE AS AN ALTERNATIVE TO HOUSE AND GARDEN DICHOTOMY

Jeffrey Wood

TRADITION IN RESIDENTIAL design has led us to think of 'building' and 'site' as two separate entities. We are conscious of sensitive site planning, and occasionally an interpenetration of house and garden, but only rarely a fusion of the two. In an article published in Architectural Design, Robert Geddes (1982) expressed the opinion that "it is time to reconsider nature as a source of architecture". Yet nature, in part, is the material of which architecture is built. Stone, wood and other materials can be considered as important elements in the language of architecture, and when beam is placed upon beam or stone upon stone, an undoubted relationship is born between the building and the natural world.

The relationship extends further in our curious hankerings to include tokens of the natural world within the room as stone fireplaces, pot plants and landscape paintings or wallpaper. It is even possible to fill a room with the scent of spring, from an aerosol can! People do tend to like being in the presence of what they perceive to be "nature".

The very concept of integrating inside and outside is, in a sense, a contradiction in terms, but one which is, nevertheless, meaningful and sustainable in that a fusion may be attained through introducing one to the other through a transitional space. The perception of integration is dependent not only on physical contiguity but also on symbolic, emotional and spiritual connections, on spatial and temporal patterns, and on notions of prospect, refuge and defensible space.
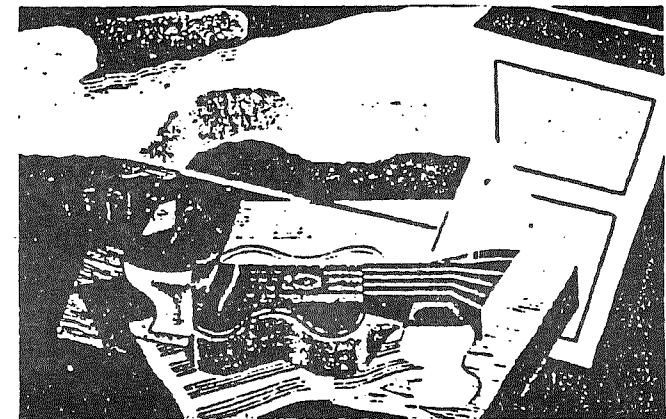
Painting through the ages has captured some of the clearest indications of man's attitudes towards the

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Figure 1
Frontispiece of Laugier's
Essai sur l'Architecture

Figure 2   Gris: La vue sur la baie

distinction between inside and outside. In Pompeii, the landscape painting often became a feature covering an entire wall. Onto this surface windows and other openings were painted, and, through these, figures were depicted in a symbolic landscape. The pictures, being abstractions, never intended to bring 'real' plants from the landscape into the room. However, the surface of the wall and the depth of the painting are seen in equal emphasis, implying the existence of an enigmatic relationship between the inside and outside through prospect imagery.

The forest edge environment offered primitive man both a secure haven as well as the advantage of a prospect over the open plains. The frontispiece of Marc Laugier's Essai sur l'Architecture expresses this concept in powerful imagery(fig.1). The engraving suggests the origin of architecture — the hut at the edge of the forest with four trees acting as columns — inside and outside being symbolically fused.

In the painting La Vue sur la Baie by Juan Gris [1887-1927] it is possible to interrelate themes of landscape, architectural space and objects in a still life through shape, colour, contour and texture(fig.2). For example, the surface and grain of the water and sky correspond to the curve of the guitar, while the relationship between the musical instrument and the sheet of music is implied through the similarity of the guitar strings to the staves. The combination of elements constructs a still life linking interior space with the exterior world "without the benefit of a perceived window"(Abbey,1985). In terms of philosophical reasoning, the painting reveals no distinct barrier between the symbolic inside and outside elements. Rather inside flows into outside through a stage of "inbetweenness".

As has already been suggested, inside and outside are essentially contradictory terms and as such are often categorised as opposites. Many designers abhor the mingling of opposites, though presented together they can be very stimulating. Everyday life can consist of contrasts: rural-urban, vegetable-mineral, closed-open, and we constantly hear, see and smell things that can attract or repel.

A contrary view, however, suggests too much stimulation to be detrimental to our mental health as a form of environmental epilepsy. As Elizabeth Kassler explained,

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I CONSIDER A TREE

I can look on it as a picture: Stiff column in a shock of light, or splash of green shot with the delicate blue and silver of the background.

I can perceive it as movement: flowing veins on clinging, pressing pith, suck of the roots, breathing of the leaves, ceaseless commerce with earth and air - and the obscure growth itself.

I can classify it in a species and study it as a type in its structure and mode of life.

I can subdue its actual presence and form so sternly that I recognise it only as an expression of law - of the laws in accordance with which a constant opposition of forces is continually adjusted, or of those in accordance with which the component substances mingle and separate.

I can dissipate it and perpetuate it in number, in pure numerical relation.

In all this the tree remains my object, occupies space and time, and has its nature and constitution.

It can, however, also come about, if I have both will and grace, that in considering the tree I become bound up in relation to it. The tree is now no longer It. I have been seized by the power of exclusiveness.

To effect this it is not necessary for me to give up any of the ways in which I consider the tree. There is nothing from which I would have to turn my eyes away in order to see, and no knowledge that I would have to forget. Rather is everything, picture and movement, species and type, law and number, indivisibly united in this event.

Everything belonging to the tree is in this: its form and structure, its colours and chemical composition, its intercourse with the elements and with the stars, are all present in a single whole.

The tree is no impression, no play of my imagination, no value depending on my mood; but it is bodied over against me and has to do with me, as I with it - only in a different way.

Let no attempt be made to sap the strength from the meaning of the relation: relation is mutual.

The tree will have a consciousness, then, similar to our own? Of that I have no experience. But do you wish, through seeming to succeed in it with yourself, once again to disintegrate that which cannot be disintegrated? I encounter no soul or dryad of the tree, but the tree itself.

Figure 3   Buber: I and Thou

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we are in "a time when the life of the body and health of the psyche may depend on a reintegration of Man with Nature"(Kassler,1964). If such a reintegration is to succeed we must have an appreciation of what we are to integrate with.

The passage quoted by Martin Buber(fig. 3) was a work of religious philosophy and not directly related to a study of the integration of inside and outside, but does, nevertheless, review a remarkable revelation of man's relationship to his natural environment. Initially Buber considers the tree as It, an object which, perceived by man, represents a living system of which he considers mainly in terms of scientific analysis(Kassler,1985). Buber then goes on to become "bound up in a relation to it...seized by the power of exclusiveness" and in doing so no longer considers the tree in terms of I-It but implicitly as I-thou in a new relationship. The two systems become mutually related at a place assuming its own identity, reflecting man-made and natural elements; a place of interchange.

The I-thou can be substituted for architect and landscape architect respectively, and the sympathetic way in which the designer can relate building to landscape through a stage of inbetweenness similar to that implied in Gris' still life painting.

"If there is a difference between architect and landscape architect," says Elizabeth Kassler, "it is that the architect, by definition a builder, must look sharply at the interaction of building and site if he is to effect an I-thou relationship". On this account there is no place for the landscape architect in establishing an integration of inside and outside, but as later examples reveal, this I believe is not the case.

The perception of architecture

Three main schools of thought have emerged in recent times that have greatly influenced the way we perceive architecture in the landscape, and thus the outside from the inside.

The first insists that architecture is totally distinct from its landscape setting, for which it can then serve as complement and foil. The building becomes "respectfully alien"(Kassler, 1964) and the dynamic relationship of opposites is paramount, such as in the

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18th century English practice of allowing rough-cropped meadows to extend right up to the Palladian mansion.

The second school deviated from the pure landscape tradition in a way that Humphrey Repton[d.1818] advocated: " the gardens or pleasure grounds near a house may be considered as so many apartments belonging to its state, its comfort and pleasure"(Kassler, 1964). Indoor and outdoor living spaces were subsequently arranged as geometric entities, disturbing the natural landscape as little as possible.

The third school drew no fast distinctions between built form and landscape, resulting in an inter-penetration of inside and outside. Frank Lloyd Wright became particularly noted for his success in this concept of design, declaring that a building should "belong to its site — of it, not on it"(Kassler, 1964).

The spatial definition of inside and outside

Studying the basics of spatial design is important in understanding how integration can be achieved (McCluskey,1985). The theoretical roots of design with which space is born are points, lines, planes and volumes. These elements provide the architect and landscape architect with a universal vocabulary of form. A main difference between the professions is manifest in the materials with which they manipulate this vocabulary, but this is by no means the only one. The way in which the professions interpret the basic design elements is also different, particularly within each discipline, giving rise to variations in how inside and outside spaces are constructed. The concepts of point, line, plane and volume provide a useful starting point but need to be developed in terms of scale, proportion, texture, pattern, unity, balance, harmony, rhythm, coherence, legibility, order and organisation of space for instance, in order to assess integration of inside and outside. This also involves value judgement and meaning dependent on factors including cultural and environmental considerations.

There is a certain limitation in the way architects use space and geometry contrasting to the freer approach by landscape architects, and this in itself may explain the house and garden dichotomy. Planting can express spatial experience just as architecture can, without the imposition of geometry on natural growth. For instance, on plan a point is a point whether applied to a location
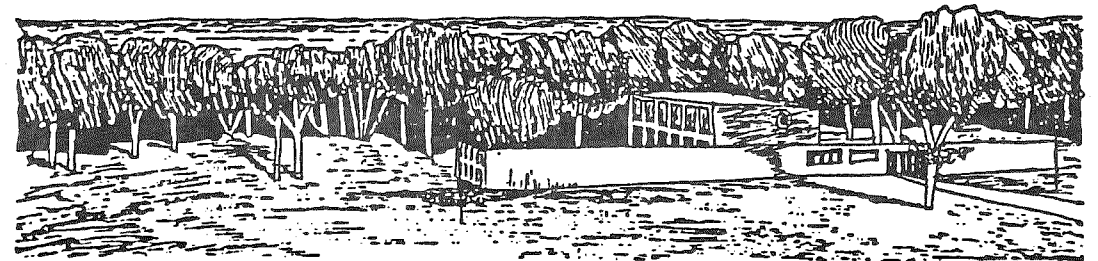
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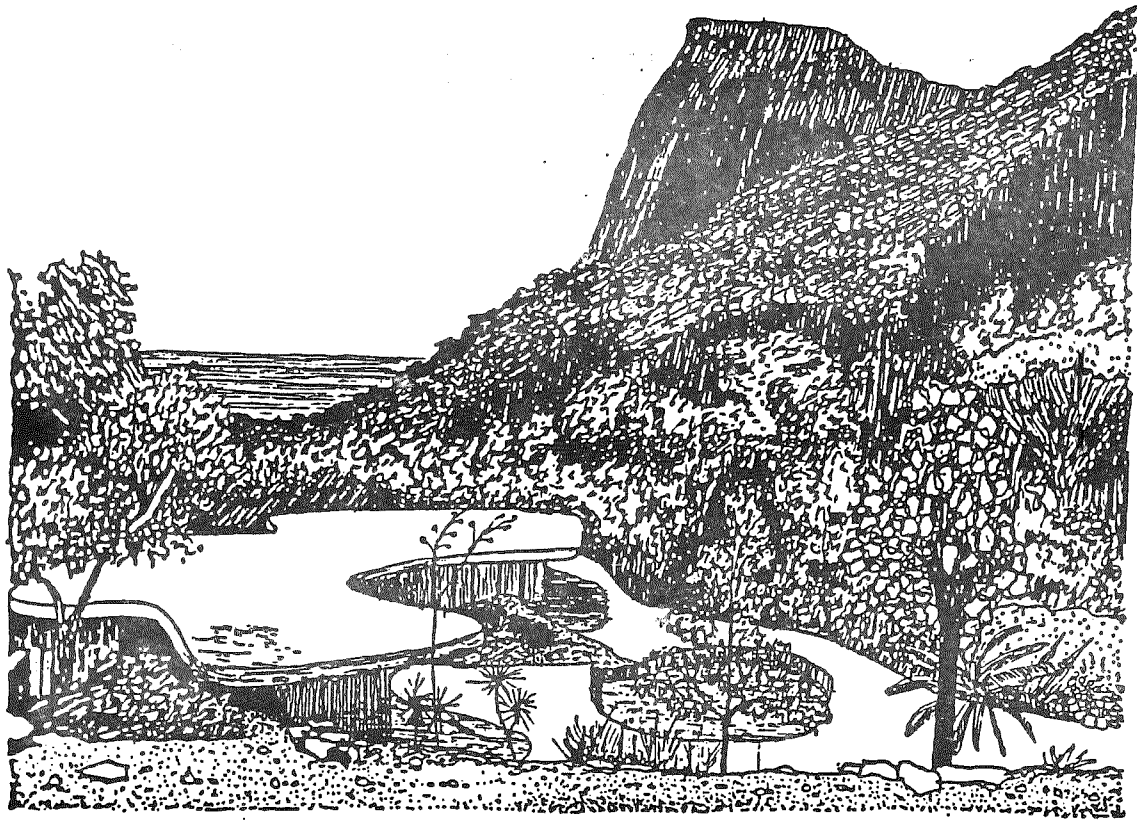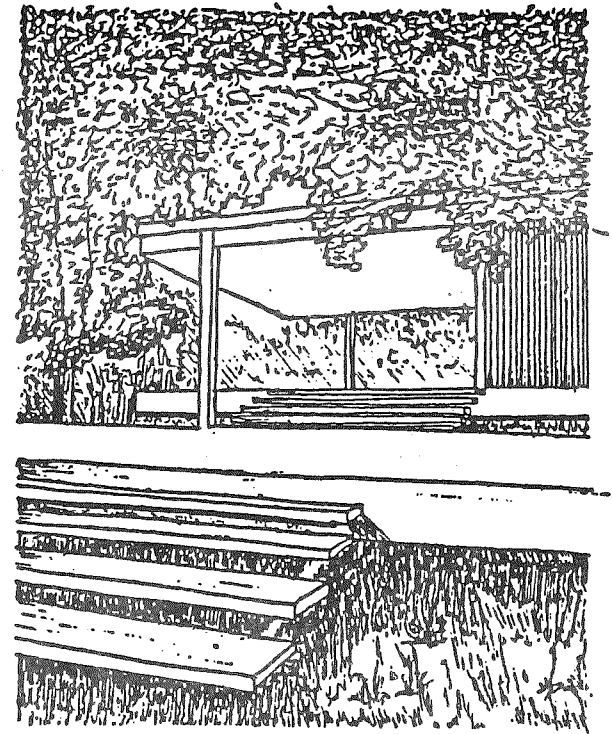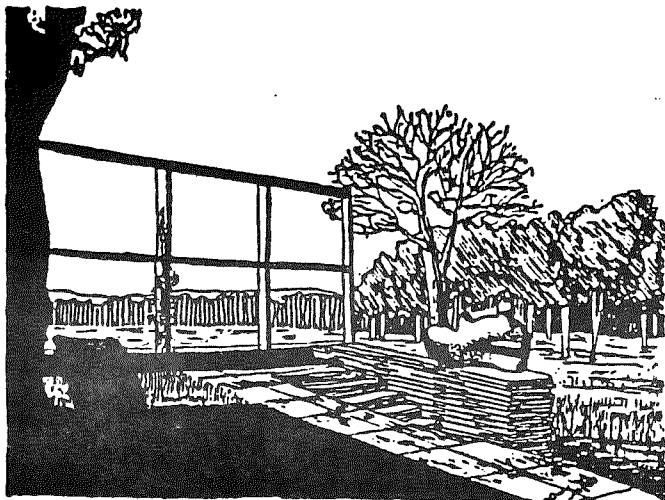
Figure 4 Oscar Niemeyer House, Rio de Janeiro
Figure 5 The Chermayeff House
Figure 6 Reclining figure by Henry Moore
Figure 7 The porch area of Farnsworth House

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inside or outside. When projected into a vertical linear element and occupying volume, the point now becomes the trunk of a tree, for instance, emulated in architectural form as the structural column. Similarly, shrubs and low-branching trees provide roughly vertical linear, space dividing planes, recreated by the architect as walls, and the space beneath tree canopies provides shelter as the roof does to the interior. The result is an array of forms and shapes characteristic to both architecture and landscape architecture which have the potential to integrate interior space with the exterior. By asserting the phenomena of natural form on buildings, instead of manipulating landscape as architecture, interesting effects can be created.

The example shown (fig. 4) keeps vertically linear elements to a minimum, their function as supports. A sculptured terrace, perforated by a pool and an enormous boulder, elaborates on the irregular curvature of the roof slab. The effect is an overall design of remarkable visual impact, and yet in designing with gentle curves and not straights, the transition from the building and inside, to the irregular curves of the wild landscape outside, seems not so distant, for as McCluskey states, "Straight lines are rare" in nature. Trees and shrubs define the "wall" of the pool area, also providing columnar, vertical stature and, beneath them, sheltered outdoor spaces. It is interesting to note the similarity of this design to the Gris painting, where line differentiates building from landscape, inside from outside.

Walls of varying composition — be they organic or inorganic — define enclosure: a house wall may extend into the landscape, or be emulated in the form of linear planting. All spaces depend on edges and trans-formations for definition; edges often provide contrasts (the plane of glass separating inside from outside), and transformation a gradual change (such as the bold underplanted overhanging roofs of a Frank Lloyd Wright house). Visual integration will be achieved if an outside feature is viewed through a window.

In explaining prospect-refuge theory McCluskey lists the effects produced when interrupting a vista with various forms. For instance, the panorama may be viewed through columns, splitting it into frames. In sketching Hadrian's villa and the forum at Pompeii le Corbusier explored similar effects which he later developed in his own architecture.

Visual integration

Where house and garden remain as two separate entities, uniting only through visual control of spatial design, a relationship is born which is reviewed here as visual integration. In effect, the relationship is between the viewer and what is viewed.

Contemplation of the countryside is an important factor in the CHERMAYEFF HOUSE, designed by Serge Chermayeff and Christopher Tunnard (landscape consultant) in 1937 and built near Halland in Sussex (figs. 5 and 6). The building maintains its separate physical identity from the landscape and yet integrates with it by extending long walls which embrace the forest edge, parallel with which the house is built(Kassler,1964). The forest, consisting mainly of beech trees, was carefully thinned at its transition with the open meadow, and thousands of daffodils were planted beneath the trees. The low brick platform of the garden extends at one end to a projecting terrace, sheltered from the wind by a glass wall which serves also as a frame for the idyllic pastoral view. A reclining figure by Henry Moore, gazing through the glass wall, completes the composition.

Mies Van der Rohe's 1950 FARNSWORTH HOUSE at Plano, Illinois, is set in an untouched natural landscape of forest and marshland . The house emulates "glass box" characteristics allowing for visual integration with the outside(Drexler, 1960). It is different primarily in its having an elevated horizontal plane defining a transitional space between the exterior and interior spaces of the building. Essentially this feature functions as a roofless porch (fig. 7), and if one can envisage a sequential effect then its spatial design can be better appreciated: the person being in physical contact with the natural landscape steps gently from the ecological floor to the architectural floor of the porch platform. In doing this he remains physically in the natural landscape, in that the porch is outside, but the architecture will remove the person to the place of inbetweenness. Up a few more steps and the house is entered, inside and outside are integrated visually, and the building remains "respectfully alien".

Physical integration

As a development on the visual relationship, we have physical integration whereby the outdoors "invades" the house and the room expands outwards. The effect can be

achieved by using man-made materials, such as brick paving, or natural materials, both organic and inorganic, including plants, rocks, wood and water.

The BAVINGER HOUSE near Norman in Oklahoma was built by Bruce Goff in 1955 as a reaction against the restrictions of box-like housing (fig. 8). The brief specified a house for a family of four and insisted on enough space to accommodate many interior plants. Bavinger, the client, also expressed a preference for natural textures and materials and liked the idea of "living in a garden-like interior"(Cook, 1979).

The result is a "shaggy textured idiosyncratic spiral" growing organically out of the ravine bed from which it coils. Both building and landscape as well as inside and outside are integrated almost completely within an enveloping oak forest.

The ground plan resembles a small garden design with flagstone paving extending from the exterior to the interior. Rocks and plants flow, as if continuously, from the outside in, separated only by a glass wall and entrance door. The entire interior is lush with greenery, for as Goff says (Cook, 1979), the inside "is treated as a conservatory for plants and birds...a continuous flow of space". Two ponds joined by a shallow waterfall complete a remarkable ground plan design. The design is ingenious not only for its integration but also for its low budget implementation as materials are local and sometimes second-hand.

Of more recent completion is BEDFORD HOUSE, a low profile, organic design built in 1977 within a five acre woodland (fig. 9). The clients wanted the house to integrate totally, both visually and physically, with the forest so that the structure would be as invisible. Not surprisingly, the owners expressed the need to "live with nature" in total seclusion (SITE,1985).

From the front difficulty arises in actually establishing where the forest stops and the house begins. The effect is accomplished by allowing tree growth at different layers within the architecture. The viewer standing in front of the house first sees the natural forest. The next layer is a glass wall. The third layer is more trees and bushes (planted behind the wall). And the final layer is a forest-planted inner courtyard. This courtyard has existing boulders integrated into the interior space, penetrating the glass wall (fig. 10).
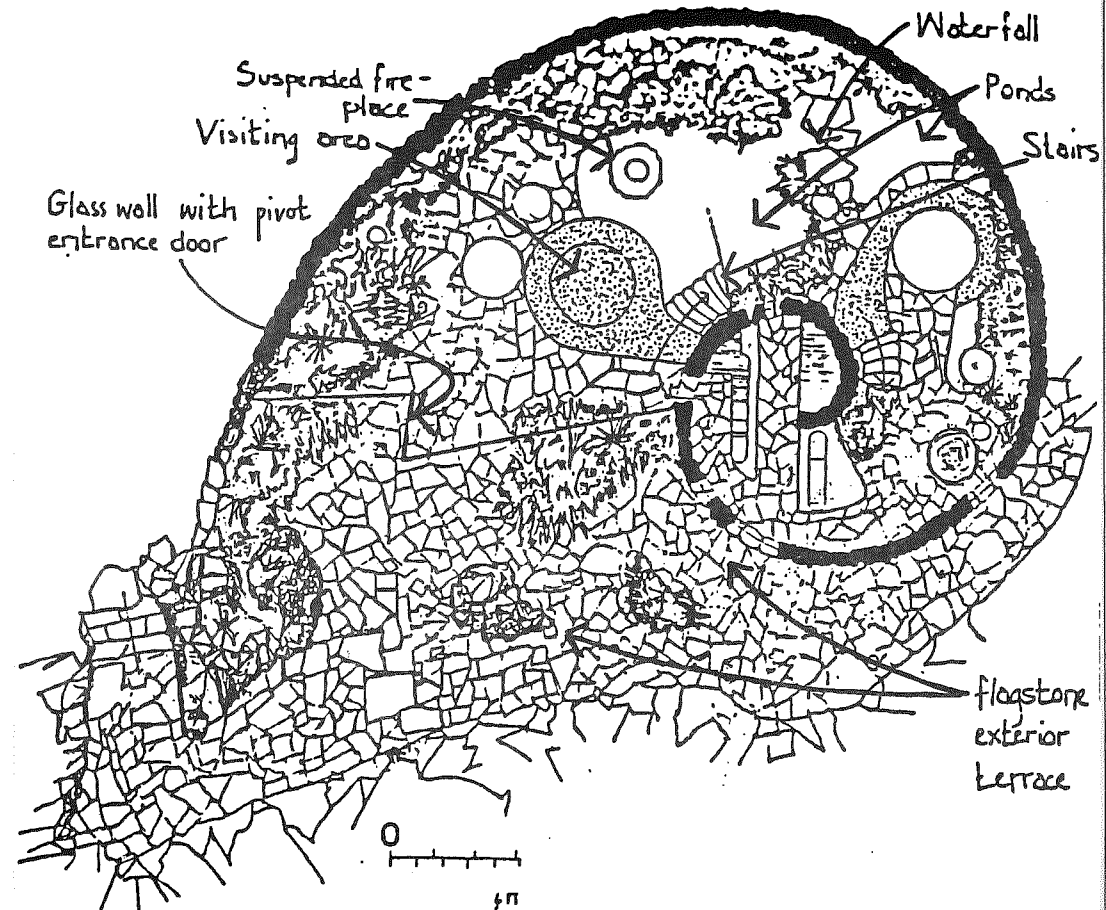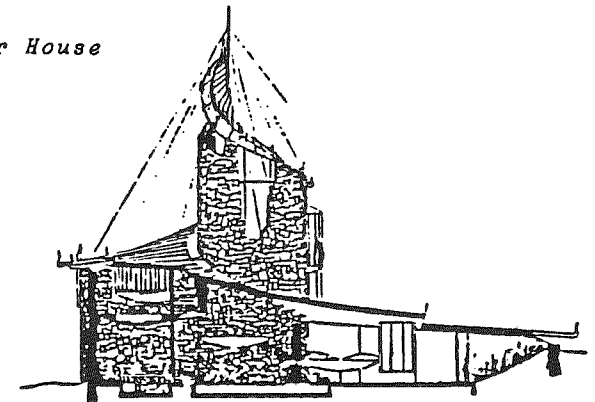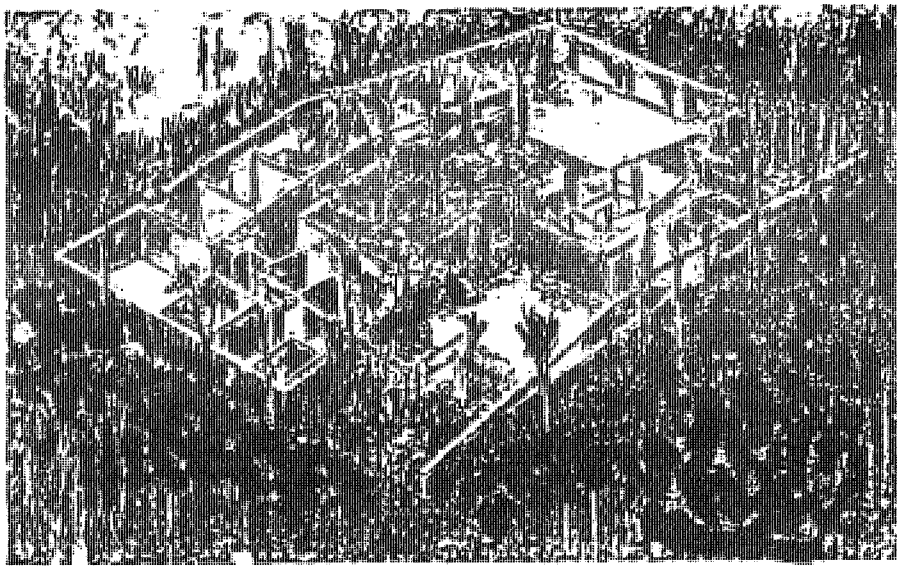
Figure 8   The Bavinger House

Figure 9   The Bedford House

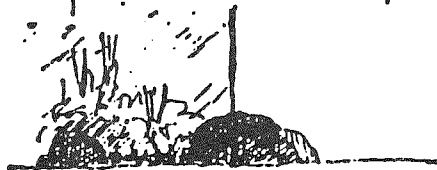Courtyard   Glass splits boulder

Figure 10   Existing boulders, penetrated by courtyard walls, integrate with interior space

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In physical integration, the spirit of the place (genius loci) transforms from being a consideration simply of the 'garden' to include 'house' as well. We are reminded of Alexander Pope's fourth Moral Essay(1731) in which he wrote:

> "To swell the terras, or to sink the grot; in all, let nature never be forgot...consult the genius of the place in all, that tells the waters to rise, or fall...now breaks or now directs, th'intending lines; paints as you plant, and as you work designs...nature shall join you"

Pope's dictum to "follow nature" forms the essence of organic design as the "grot" (grotto) becomes the organic dwelling and the "terra" the garden.

Listing a number of natural landscape features, McCluskey(1885) explains that each place has a quality of uniqueness, "both by virtue of its physical composition and the way in which we experience it".

On a similar theme Frank Lloyd Wright stated that the designer must "harmonise his building masses with topography and typify his walls with the nature creation they consort with...That is to say, make the essential spirit of the thing, however or whatever it is, come through as object"(Kassler, 1985).

Sequential integration

Path systems may take a variety of form(McCluskey, 1985), but all provide the means of experiencing spaces along a route. McCluskey explains how Places can be inside or outside, joined by the Path, and ultimately entirely bound by a Domain. These three are the basic elements constituting both interior and exterior experienced space. By arranging integral devices along the path system passing through both inside and outside, a sequential relationship is born.

The MACKENZIE HOUSE, New South Wales, was designed by Bruce Mackenzie in 1984 as a landscape architect's concept of a residential environment (fig. 11). The result includes a series of delightful and useful courtyards with path systems leading through the house and garden. Mackenzie states that his house "is not meant to be regarded as a house in a garden or a garden around a house"(Mackenzie, 1986). Rather indoor and outdoor spaces are allocated in relation to needs and
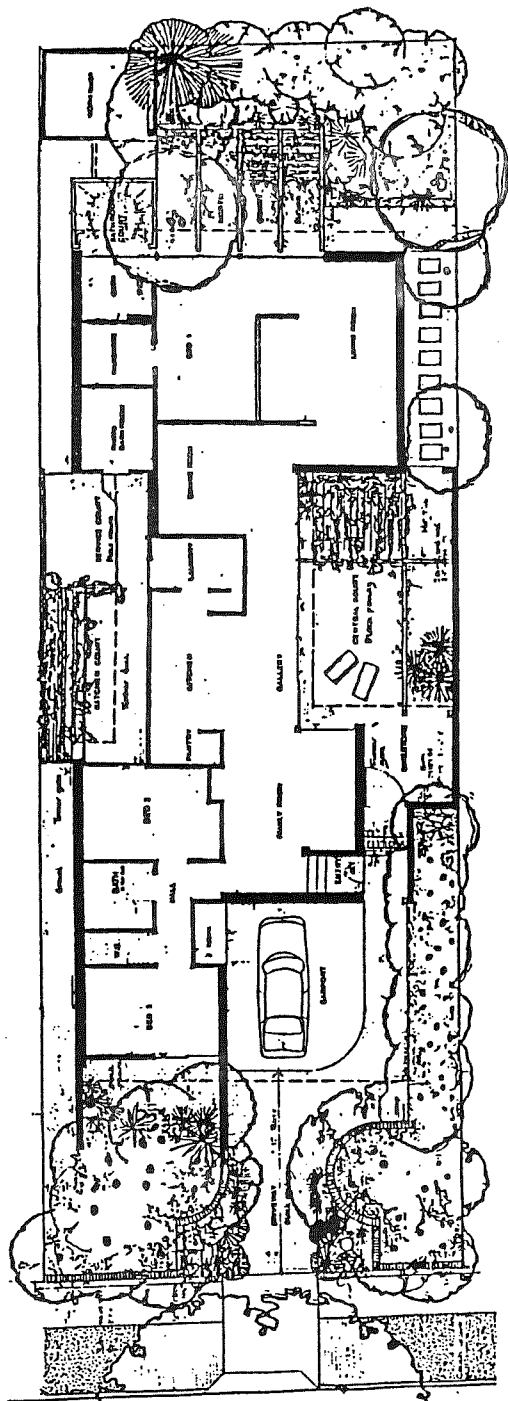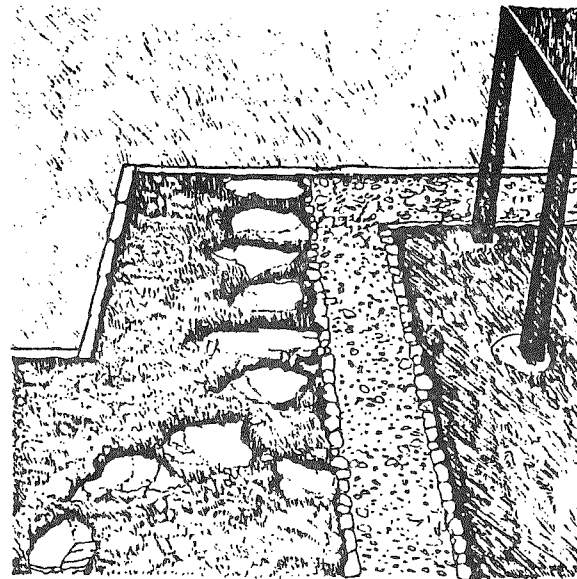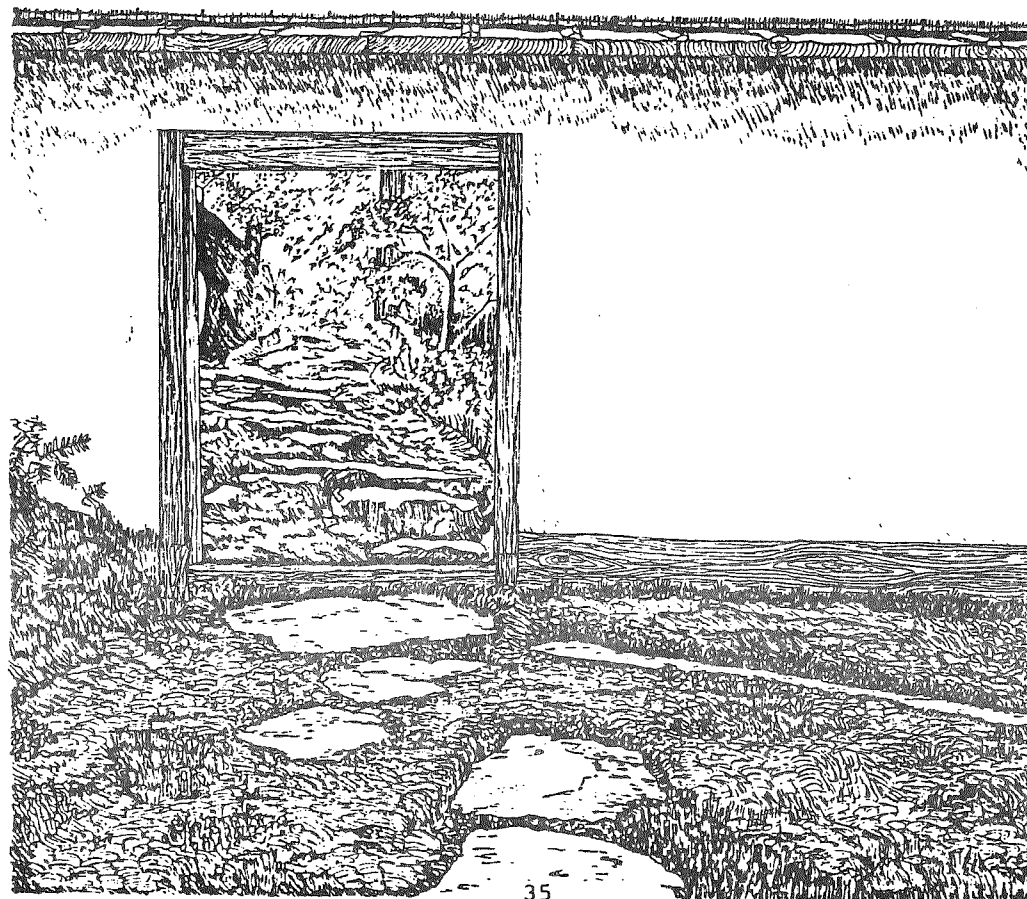
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Figure 11 The Mackenzie House

Figure 12
Building to site transition, Katsura Imperial Villa

Figure 13
Continuation of stepping stones through the gate unifies both sides

priorities relating visually to one another with glass walls. The courtyards extend parts of the house to the outdoors but at no point does the exterior actually physically integrate with the interior.

On arriving at the house the visitor has to walk along a cave-like passage to the entrance. From this point it is intended that perception of the different aspects of the house be understood in steps. On entering the house there is a contrast from the dark enclosure outside to the bright, expansive, free-flowing interior, and immediately the visual integration of inside and outside is noticed, the spaces being mutually accessible via sliding glass walls. All habitable rooms have courtyards planted with a wide variety of indigenous plants, allowed to take an organic natural appearance in order to reduce maintenance. Within the courtyards, overhead timber structures help to visually integrate indoor and outdoor rooms, and planted with vines provide alternate sun and shade areas . From the central court, one can either elect an outdoor path parallel with the house which leads to the north court, or the route through the house. The north court benefits from full Australian sun and is in juxtaposition with the bathroom court which expands the small bathroom space into an open air garden with the sky beyond.

KATSURA RHYKYU, an Imperial villa at Kyoto, Japan, is a paradigm of ultimate sophistication in all integrating techniques. Occupying 17 acres of land the residence includes a stroll garden sequentially linking five tea huts with the main building.

Although built during the early 17th century, the residence bears remarkable similarity to architecture of the early 20th century. In Katsura Walter Gropius saw justification for his modernism, and his buildings, like those of Mies Van der Rohe and le Corbusier, emulated the same rationalistic, functionalism of the Imperial Villa (Koh, 1984).

The entire scheme is meant to be seen in sequence with landscape and architectural experiences building upon each other (figs. 12 and 13). Although there is a constant interplay of contrasts along the route between order and disorder, geometric and organic, artificial and natural, architectural and garden, the total effect is one of unity in which integration is expressed in various ways and on different levels: natural stone is used for the building's foundations; the gradual transition

between inside and outside is achieved by architecture reaching out into the garden, and the garden extending beneath the veranda; natural materials and forms are used extensively inside and out; the openness of the architecture invites views out to the garden and landscape beyond; the staggered plan of the residence emphasises the transition between buildings and garden.

The integration is one not just between inside and outside, but between ecology, functionalism, beauty and meaning , which subsequently become manifest in the indoor/outdoor relationship. Geometric and organic provide a foil for one another — each accentuates the qualities of the other by means of contrast, but this does not detract from the unity of the whole. Instead it adds to the multi-modal perceptual experience where transitions involve visual, tactile and kinesthetic responses as one moves from inside to the outside, and along the sequential route around the garden (Koh, 1984).

Sequential integration appears as a paradigm of integral techniques in its manipulation of all types of integration. If as a profession we as landscape architects attempt to enter this field of specialisation, it is upon sequential integration, with its variety and appropriateness of materials, that it would be best to concentrate.

Conclusion

Design tends to date as our appreciation of a certain fashion becomes obsolete. Flexibility in design is a concept presently valued as a factor of primary consideration in both architectural and landscape architectural professions, facilitating for changing trends and human needs and values. The principle relies heavily on the division of space into easily alterable areas, such that architecture forms the basic skeleton of the building allowing for present-day trends to manifest in the decor. For this reason it is probably most favourable to categorise inside and outside as separate entities, as physically integrating the spaces will inhibit the possibilities for future change. There would be less of a problem accommodating for change with visual and sequential integration as, for the most part, the relationship is achieved by indoor and outdoor spaces remaining independent of one another.

The landscape architect could quite easily create schemes that turn the home into an indoor version of the outdoors, but this seems to be a pointless exercise. However, using wood, rock, and water elements as idealised, concentrated symbolic elements of our natural environment can add a dimension of meaning to the interior which will satisfy both visceral (emotional) and cerebral (intellectual) needs. The landscape architect has the ability to manipulate natural form to produce this desirable effect and could turn his landscape art into an innovatory form of interior design. Relating aspects of the new interior design to the garden (or vice versa) will create a reciprocal relationship which could be made as obvious as the client wished. Close consultation with the architect could enable an interior scheme to be devised which would afford integration of inside and outside, and yet accommodate for future change. In applying a symbolic unifying theme to house and garden, a sense of order will result which could quite easily extend to become a westernized, but indigenous, equivalent to Eastern house and garden philosophy.

All of the examples of integration mentioned are stimulating in their own way, and generalisations on what constitutes an ideal relationship between inside and outside cannot be made. Subjectivity in design has led to many different idealizations of architecture and landscape architecture, but what is ideal to one person is not to another. Therefore, if one were to ask the question if there is an ideal relationship between inside and outside, the answer is probably no. Satisfying both architectural and landscape architectural requirements will follow trends, as personal needs and values change. However, integration in some form or other enables man to be in constant touch with his total and natural environment, and for this reason it is valuable both as a therapy for the psyche, encouraging repose and tranquility, as well as an education in environmental appreciation. Inside and outside integration reflects human attempts to reconcile built and natural form in a mutually defining process.

As the boundary between inside and outside becomes obscure and tenuous with integration, however, so also does the appropriation of design roles between architect and landscape architect. The examples reveal a strong domination of architect designed schemes which reflects a number of contributing factors: a far longer history, economic values (as it is often cheaper to employ one

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person to design the house and garden than set up a consultation between architect and landscape architect), and the fact that the interface between inside and outside is usually a vertical element of the building.

The landscape architect has the potential to achieve comprehensive integration of inside and outside, but at present professional status and experience do not encourage such a move. Architects may be willing to discuss and amend the external works following discussion with a landscape architect, but rarely would it be considered acceptable for a landscape architect even to comment upon let alone suggest an alternative to a building's arrangement. Leading landscape architects are optimistic, though, that they are developing their roles and demonstrating their abilities satisfactorily enough to enable such actions to be taken in the near future. However, only by understanding the basics of design theory will we be able to further develop principles directly applied to any form of specialised design.

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IN THE WAKE OF THE STORM :   TREE DAMAGE AT KEW GARDENS

Sarah Edwards

ON 16th OCTOBER 1987 unprecedented weather conditions
struck the south of Britain. Hurricane force winds
caused extensive damage to property and the loss of 15
million trees from the landscape. The storm was not
technically a hurricane but a mid-latitude depression
which intensified abruptly over the Bay of Biscay, and
whose movement was blocked by a large anticyclone causing
it to affect Britain predominantly. Between 1 and 6am on
16th October pressure fell dramatically and the winds
increased with gusts of up to 85m.p.h. being recorded.
By midday, the centre of the storm had moved away over
the North Sea but in a few short hours the landscape of
South East England had altered dramatically. Trees had
been particularly vulnerable because of the abnormally
high rainfall in the first few weeks of that month,
saturating the soil, thus undermining their roots'
anchorage. In addition, many were still in full leaf
increasing their resistance against the wind. The
direction they fell reflected the angle of approach of
the strongest winds, being southerly on the eastern side
of the country and westerly on the west.

On a more local scale topography was an important
factor. The wind was funnelled by hills and valleys or
large buildings, explaining the apparently random
destruction of certain stands of trees. Giants which had
stood for 100s of years were felled, whole woods were
brought down and priceless collections of rare trees
established over centuries were destroyed literally
overnight. Of all those plant collections in southern
England that are nationally important from both
historical and scientific viewpoints, the Royal Botanic

*Sarah Edwards is a second year student in Landscape
Architecture in GlosCAT. This report is an edited
version of a research study she completed in January
1988.*
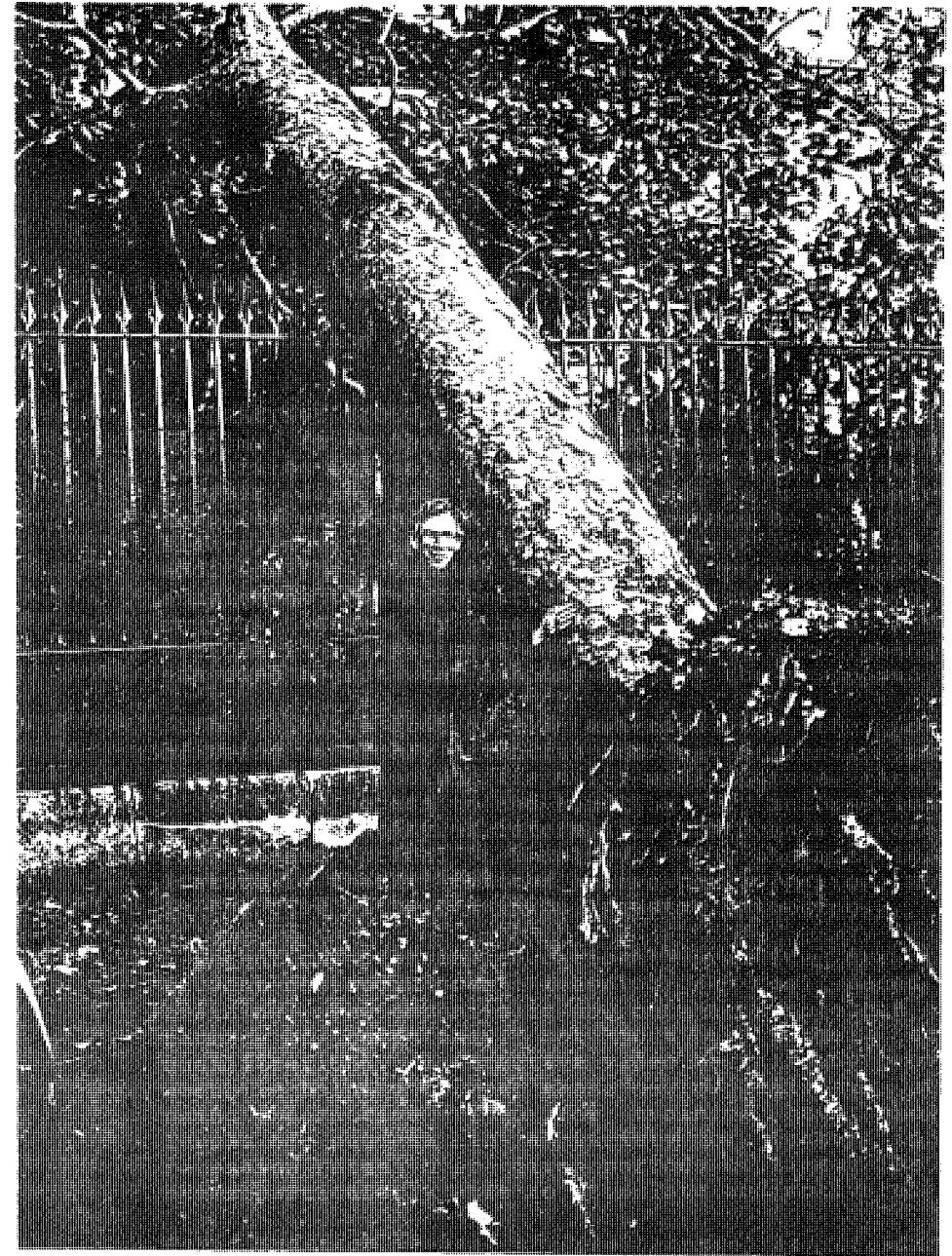
Gardens at Kew probably was the one to have experienced most damage from the storm. For over two hundred years the gardens have functioned essentially as a scientific establishment rather than as a landscaped park, and the damage done to many prime specimens is more a botanical loss than an aesthetic one.

The Royal Botanic Gardens are situated in Surrey where the River Thames forms a double bend from Richmond to just east of Kew Bridge. Running north eastwards it encloses the Old Deer Park to the south west and the Royal Botanic Gardens to the north east, the two being separated by a dry ditch. The site of Kew Gardens is virtually flat apart from some artificially created mounds and hollows.

The soil is developed upon river gravels and sands, overlying London clay. It is free-draining, rarely suffering from waterlogging, but it tends to be shallow which does not encourage deep and extensive root growth of trees. The climate at Kew has been closely monitored over a long period at the main observatory. The average rainfall for the area is 590mm/annum, being fairly evenly distributed throughout the year.

Because of Kew's low altitude severe gales are rare. However high winds have caused damage in the past: on 29th July 1956 several trees were uprooted and over sixty large limbs were blown off in addition to hundreds of smaller ones.

First estimates of the 1987 damage put the toll at 10% of the trees at Kew had been uprooted, and later, more precise figures showed that 500 trees had died and 1000 were badly damaged. Several buildings were also damaged such as the temporary Palm House, the King William's Temple and Hanover House. On the morning after the storm, a curators' meeting was held to discuss a contigency plan and the gardens were closed to the public until the extent of the damage was made known and made safe. Tree gangs made up of tree surgeons and other Kew staff were sent out to start the clear-up operation and rectify the urgent problems such as the damage to the Palm House. Fortunately it had been a fairly mild night and the air entering through the broken panes of glass did not do any irreparable damage to the priceless plants inside.

A Tree of Heaven (Ailanthus altissima) had struck the roof of the newly-restored King William Temple, but

luckily this was found to be less serious than was at first thought. Hanover House also had a tree fall onto its roof. Remarkably, the Pagoda and the other glasshouses were unaffected.

Many very significant trees were lost such as the Royal Walnut which was planted by the Queen at Kew's bicentennial celebrations in 1959. The Sacred Tree of Kisa was also uprooted; this was planted by the Emperor Hirohito of Japan on his first visit to Britain after the War. Also among the casualties were the oldest recorded Zelkova carpinifolia, dating from 1761; three Northofagus obliqua, 80 feet tall and dating from the first introduction of the seed by Elwes and Henry in 1902; also one of the only two Himalayan Elms (Ulmus villosa) in the country was uprooted.

Certain species were far more susceptible to the storm than others. As the gardens had been laid out taxonomically some areas were found to have been more damaged than others. For example, many of the trees situated around the Pagoda were devastated. This area contained many species from the Leguminosae family and also some Juglandaceae. Of two pairs of mature Hickories, three were blown down. Surprisingly, despite its flexible character, this species was badly affected throughout South-Eastern Britain. On the other hand, it was found that some species such as Wellingtonias (Sequoiadendron giganteum), Monterey Pines (Pinus radiata) and Western Hemlocks (Tsuga heterophylla) remained intact, probably because in their countries of origin where gales of up to 100 m.p.h. are common they have developed a flexible trunk. The majority of Quercus species fared badly; the Holm Oak (Quercus ilex) which makes up the Syon Vista was unaffected however. Other vistas did not fare as well: along the Broad Walk seven out of ten Tulip-trees were uprooted, so destroying the avenue effect. Behind the row of Tulip-trees a secondary row of Oaks were planted about three years ago, so when they are more mature the effect intended will once again be evident.

In some cases the damage caused to some trees will not become apparent for a few years. Where trees have had root damage the trees will not be able to take up enough water volume and the extremities of the tree will die back resulting in "stagheadedness".

Most of the damage done to shrubs occurred when trees fell on top of them, although some of the taller shrubs

like Lilac were uprooted. The shrubs that did survive the storm may suffer from lack of winter shelter and summer shade cover for two or three years.

Immediately after the storm, machinery was assembled and the expensive task of tree felling and removal of dangerous branches began. Very careful attention was paid to the condition of the trees and dead or dangerous branches were removed, "hung-up" trees being brought down and branches cleared away. By Wednesday 21st October it was possible to allow limited access for the public, with the areas still needing work being roped off. [The gardens are now open to the public virtually in their entirety - Ed.] Clearance work then centred on the west and southern parts of the arboretum, where remedial work still continues. The root plates of large trees are a problem, for many are several metres in diameter and laden with soil. They can neither be burned or cut up easily, so Kew has had to hire a machine that converts tree roots into sawdust. Some of the fallen trees are intended to be left in situ for ecological purposes, as the rotting wood will encourage rare and important insects.

In regard to planting, Kew has a ten year planting programme. The winter planting of stock will be systematically accelerated for the next few years to make up for the losses, but the replacement of rare species will be gradual, as and when stock becomes available. The emphasis is on planting for the long term rather than for immediate effect. The replanting will not be as rigidly structured as in a National Trust property, but certain constraints such as creating the vistas and taxonomic collections will have to be observed, although they may not necessarily plant 'like for like'. In a collection such as Kew landscaping has to be balanced with the needs of the botanical collections. In some cases the loss of trees has come as a mixed blessing. For instance, in one area there was insufficient space for the planting programme of the Carya species and some of the collection had had to be transferred into another area, but now there is additional space the newer plantings can return to the main collection.

Since the storm many rare trees, previously unavailable, are now used for scientific research within Kew's Jodrell Laboratory; 50mm slides taken from all the fallen trees will be available for future analysis. Botanist David Cutler is currently undertaking an extensive study on tree roots and their effects on buildings using information gained from the lost trees. The results of this survey should be published by the end of 1988.

The full financial cost of the storm will not be known for some considerable time. A significant proportion of the expenditure will have gone into the 'clear-up' operation, including the cost of machinery and overtime payments to employees. In addition further purchase of tree saplings and the funding of botanists to collect plants will be borne by Kew.

Fortunately, in retrospect, the storm's effects on Kew have been fairly limited. This is probably due to a combination of factors including topography and varying ages of stock. Many of those trees that were lost, however, were of great national, if not international, significance, because of their rarity, age and size, but hopefully Kew will keep up its policy of systematic tree planting and in time most will be replaced.

1987 DISSERTATIONS: BA Hons (Landscape), Gloucester

The following is a list of the successful degree dissertation submissions for 1987. These documents can be consulted in the College Library and abstracts may be obtained from the Librarian on receipt of a stamped addressed envelope.

AINSWORTH, Nicola — Sheltered Dwellings, their Design & Landscape through different Housing Associations in Belfast, N. Ireland

BAGULEY, Robin — Urban Conservation — The crippling of townscape

BAILEY, Russell — Colliery Spoil Tip Reclamation Schemes

BROOME, Richard — The Effects of the Community's Involvement in Design upon the Dynamics of Urban Form

CALNAN, Timothy — The Landscape Architect in Development Control

EDWARDS, Nicholas — Acid Rain — an environmental issue that many are aware of but few understand

FINKLE, Matthew — The Case for Recreation as a Positive Land-Use Policy in the Green Belts

GREEN, Sally — A Case for Containers?

HOPPER, Paul — Landscape Preservation

LOE, Timothy — Christianity and Landscape Architecture

MAY, Pauline — Diversified Farmscape?

NEATH, Ian — The Urban Park for Today and Tomorrow

PALGRAVE-JONES, Sarah — Pedestrianisation in Historic Cities— effects and consequences

PEELER, Charles — The Traditional Rural Roads in England and Wales: a resource we have overlooked?

RANKINE, David — Children's Play

RENOW-CLARKE, Corinne — The Severn Barrage

RICE, Leslie — A Naturalistic Approach to Play Area Design — an alternative for the future?

RIGBY, William John — The Range of Plants Predominantly Installed into British Interior Design does not reflect that which is currently available

SANDY-WINSCH, Matthew — Landscape Education: the value of diversity

SIEGERT, Carolyn — The Importance of Vegetation Maintenance and Management in Motorway Planting Design Strategy

SILMON, Mary — Bio-Engineering

VENTON, Michael — Disused Railways and Canals: their Potential Use and Policies Involved

WAY, Pauline — Farming for the Future Landscape

WOOD, Jeffrey — The Integration of Inside and Outside as an Alternative to the House and Garden Dichotomy

WORKMAN, June — "Selling" the Profession

BOOK REVIEW

Dying Forests: a crisis in consciousness, by Jochen Bockenmuhl, translated by John Meeks, Hawthorn Press, Stroud, Gloucester, 1986, 96 pages, £8.95.

THERE ARE MANY WAYS to self-enlightenment. Jochen Bockenmuhl takes as his starting point the methods of scientific analysis developed by Goethe and extended by Rudolph Steiner into his theory of Anthroposophy. The basis of this approach is founded in the system whereby Goethe looked at living processes, relating the various parts of plants together as 'transformations' of one another. Leaves, sepals, petals and anthers express in their space-time totality the essence of the whole plant, which is held in view as a systematic integration. Instead of producing a simple botanical analysis, Goethe arranged the related parts of the plant into pictorial assemblages, in series. By this means he was able to show that the outer appearance and the full functional programme of the plant's existence is united, in an inner concept. Dr. Bockenmuhl believes that it is possible to extend this understanding of the laws which make up the plant's life, and, by an observation that is at once exact and artistic, to make a similarly non-reductionist analysis of the complete landscape. This is not possible, however, if the method is purely empirical, or Cartesian, because such systems reduce truth to a series of isolated facts. One is reminded of Blake's tirade against the atomism of fools.

An attitude towards landscape analysis such as this will inevitably attract criticism that it is another poetically mystical land-cult. Memories of the Whole Earth Catalogues, "No-one's more important than the earthworm" by Stackridge, the more romantic aspects of Ian McHarg's 'Design with Nature', and what might be called liberation ecology still reverberate, and represent ideas which are perhaps perennial. They are also often as dubious as they are seductive, and it is important in a book such as this to avoid a heady romanticism. The temptation has proved too great. Psalmodic references to the 'starry firmament', as well as undefined usages of 'spirit, soul and substance' may be no more than a stylistic indulgence or a translator's lapse, but equally they may cause the reader to suspect that the use of such religious connotation words are really just a cover for a reflowering of pantheism, or semantic mysticism. However, it might be as well to

remind ourselves that Steiner, in the 1920's linked the lack of fluoride in drinking water — and an excess of lead in the atmosphere — with problems with which we, many years later, are very familiar. It is unfortunate that in this book we have to cut our way through so many ethereal 'soul experiences', like a neophyte unable to grasp the basic articles of faith. Green-set text is used to signal a near-religiousity in which the inner secrets of the book are not expounded, but, instead, the dewdrop is offered as a symbol of 'intuitive holistic knowledge'.

The book presents two linked concepts: the 'ensoulment' of landscape, and a system of bio-dynamic agriculture. Landscape is to be understood by the use of three principles which must be applied in the field, and not imposed by pre-conceived drawing board ideas or simplistic methodologies. Firstly, the 'present context of phenomena' must be perceived. This will enable us to describe 'facts' such as "this wood has grown naturally over a heap of stones in an orchard". Illumination, blending, and growth are determined by this context, which is influenced by both earthly and cosmic forces. Harmony will result, which, in untouched nature, will become monotonous. Man can 'raise' nature into a larger life-context by directing certain natural themes, or motives.

The second principle looks at the rhythmical relationship of natural processes. The history of the landscape and its future potential can be perceived through a "context of transformations", in which phenomena such as seasonal progression and growth segments provide us with clues. The third principle considers those life-processes which give a landscape its individual character, or its 'biography'. Pictorial expression of, for example, an underlying physical feature is given by plantlife, which also reflects the results of human actions. This, says Bockenmuhl, can only be brought to full clarity by the living process of thought. And, since we have forgotten how to think (apart from in a reductionist sense), the crisis in ecology is primarily a crisis in human consciousness. That the forests are dying is an eloquent expression of our own dis-ease.

There are many valuable insights in the book. There is much to commend the principle that one should always ask this question of a landscape: "What would like to happen here?" There is beauty in the description of animals in

their "dreamlike consciousness", weaving a totality of sense impressions into their world of migrations and engineering. It is true that many insights into reality come to us most felicitously by way of artistic intuition, and there is no need to apologise for, or be obscure about, such perceptions. The natural understanding of a child, its senses untroubled by concepts, is experienced by us all. The poet R.S. Thomas has had a long fascination with the natural 'truths' of a peasant culture, and in his work the reader can sense a tension not unrelated to some aspects of Dr. Bockenmuhl's book, where the intellectual contemplates innocence. Thomas's poetry is terse and lacking in sentimentality, whereas Dr. Bockenmuhl has a tendency, already noted, towards romanticism. The introduction, by Professor Brian Goodwin of the Open University is also lacking in definition of the ubiquitous triad of soul, spirit and substance. Instead we are given a recollection of a summer ramble in Bedfordshire in which he and a friend contemplated such weighty imponderables as "the worm in the heart of reductionist Cartesian philosophy", whilst "pheasants leapt from the undergrowth, whirling and squawking". The art of bathos still has soul, spirit and substance.

It is, therefore, in presentation rather than in content that the book is flawed. The freehand colour sketches by the author have a primitive, childish charm, but they take up unnecessary space, and would be improved if they developed a more analytical style showing diagrammatically the application of Goethe's principles. The claim that "the full reality ... in all of its complexity can, of course, only be touched upon here" lacks credibility in view of the large amount of blank paper, which amounts to almost 20% of the book.

As Professor Goodwin observes, the alternative tradition within which Bockenmuhl writes is timeless. It seeks to unite art with scientific method, and it strives to be both Arcadian and Utopian. The promises of dialectical materialism and pragmatic functionalism may have failed, but they continue, and it is necessary to challenge them, as this book does. It is, however, too late to return to the ordered ways of medieval Europe, or to the omen-based lives of our ancestors who appear to have been as ignorant of the mechanics of procreation as they were of rainfall. There have been too many ideas for us to return to an age of innocence, if any such thing ever existed.

The book will provide stimulating background reading for someone contemplating a career in conservation, or landscape design. It is a valuable corrective to consensus professionalism. To succeed, its ideas need the imaginative use of the new technologies if we are to sensitively measure and assess the evidence of natural and synthetic processes which all sites contain. The issues raised by the book are contemporary, as the title implies. It is unfortunate that the power of the manifesto is weakened by the pious appeal for spiritual re-awakening, the homespun naivety of the illustrations, and the omission of examples demonstrating the partnership with nature which is so passionately advocated.

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