IAN McHARG ON CITY PLANNING

Professor Ian McHarg was a visiting scholar during the 1986-87 academic year in the Department of Landscape Architecture at the University of California at Berkeley. The Berkeley Planning Journal took this opportunity to interview Prof. McHarg on the subject of city and regional planning. Prof. McHarg is a Professor of Landscape Architecture and Regional Planning at the University of Pennsylvania, also engaged in private practice, and the author of *Design With Nature*. The interview was conducted on April 20, 1987, by Cliff Ellis, a doctoral student in city and regional planning at Berkeley and editor of the Berkeley Planning Journal.

BPJ: How do you see the role of ecological planning within the discipline that we call "city planning"? Are you proposing ecological planning as *the* intellectual foundation for the planning of human settlements, or is it one approach among equals?

McHarg: Well, I can tell you about its origins, that's very easy. About fifteen years ago, I approached the Ford Foundation with a proposal to initiate a program to make planners out of people with backgrounds in the natural sciences. It was funded to a value of a million dollars, which allowed me to recruit a faculty of natural scientists, and students with bachelor's and master's degrees in the natural sciences. The origins were clear; there were large numbers of environmental problems which the orthodoxy of city planning, which I had studied myself at Harvard University, was inadequate to solve. This required a comprehensive understanding of the environment. All of the environmental disciplines had to engage in the planning process to supplement the existing ones. So its origins were really quite modest; it was meant to supplement.

But there is a possibility that it can be more than that. The reason is its comprehensiveness. Ecological planning involves a large body of physical and biological science, and a selected number of social sciences which are compatible with the ecological view. Among these I would include ethology, ethnography, cultural anthropology, and epidemiology. Given the fact that there is such a large body of orthodox and powerful science with which this view identifies, the chances are very good that it will take on a larger role.

And the large model – basically the Darwinian-Hendersonian model of adaptation – is clearly crucial to the ecological point of view, and it is all-encompassing. *Nature doesn't mind what method you use to adapt, but adapt you must.* I think that this model of adaptation is a very good one, and I don't think there is any equivalent, anything quite

so encompassing, within orthodox city planning. At least I have not encountered it.

As far as I am concerned, the largest problems which the world confronts all have profound environmental content. That is, nuclear war, nuclear winter, carbon dioxide world warming, the implications of this on world agriculture, ozone, acid rain, toxic waste, and so on. I can't think of a major social problem that doesn't have a very large environmental content. And if you consider the problem of cities, we have to confront the reality of cities of 17 million people. If one speaks to Dick Meier on the Berkeley faculty about cities of this sort, with which he is very familiar, it is clear that the problem really is survival and subsistence, and there is a very large environmental component in this too.

BPJ: From originally being identified with natural science, do you think that ecological planning has added a strong concern for social and economic variables, perhaps in response to earlier criticisms that it wasn't addressing these matters?

McHarg: There is no question about what happened to me. When I wrote *Design with Nature* I clearly avoided any reference to any social science I had ever absorbed. And I had four graduate years of social science at Harvard. I never had a single course in natural science during my whole graduate experience there. And so, I was very conscious during the writing of this that I was explicitly excluding political science, sociology, and so on.

BPJ: It was a conscious choice in writing the book.

McHarg: Because it became very clear to me that much of the social science I had learned was absolutely antithetical to ecology. The most clear example of this is economics, and I learned economics from very good people. I mean Joseph Schumpeter, Seymour Harris, John Black, and John Kenneth Galbraith. These were very powerful figures in economics. But there was very little of the environment in any of this, and what there was, was absolutely antithetical to the ecological point of view.

One day I got a call from the National Institute of Mental Health. A man named Dick Wakefield phoned me, and said he thought ecological planning was fine and *Design with Nature* was all very well, but wasn't it time that we populated these studies with people, and I said sure.

So I wrote a proposal, and the idea was whether or not we could build a bridge between ecological planning and the social sciences. All of the natural scientists and ecological planners whom I worked with

were generally agreed that physical processes were integrated and synthesized in geomorphology – geology, hydrology, and soils. The land is expressed in the processes through which it received its form. We also believed that plants and animals represent another level of biophysical synthesis – ecology. And so the question was, *could we go to a third level of synthesis*, in which people and their activities were seen as reflecting a biophysical social system, a human ecology.

I believed that we could begin by introducing behavior, based on ethology. We could build a bridge between ecology and ethology because ethologists understand the language of ecology: ethology is only a special branch of the ecologists' concern with animal behavior. Then we can move to ethnography because ethnographers – like Clifford Geertz, Bennett, and Stewart and so on – were very familiar with the literature of ecology and ethology. Then, we could move to the cultural anthropologists, particularly those who emphasized adaptation and considered contemporary problems.

We felt that every single one of these steps involved a bridge in which each new discipline was compatible with adjacent subjects. And the last one was the epidemiologists. An epidemiologist would know about climate, health, geopathology, soils, nutrition and health, vectors of disease, and finally vegetation and wildlife as they relate to human health and nutrition. So that an epidemiologist would in fact complete the circle.

I think there is the possibility of quite a full model if one had all these people represented because they are compatible. But as you can see, economics is still omitted, political science is omitted, *but I think one could find compatible people within these realms.* Certainly, Kenneth Boulding would be a compatible economist, as would be Herman Daly and James Weaver.

BPJ: Some of the "outsiders" in the field.

McHarg: We are beginning to find people in the social sciences who are espousing the ecological point of view too.

BPJ: It's interesting that you used the conduit of anthropology to get back into the social sciences. That was the social science field you found most compatible with the ecological method.

McHarg: Yes. You see, I had an awful lot of sociology at Harvard. I had Oscar Handlin, and Talcott Parsons. But it's quite clear even reviewing the lectures which they gave that the idea of there being a systematic relationship between man and nature was something which had never crossed their minds. And moreover, had it crossed their minds I think they would have dismissed it. They really assumed that

the world was a social system, and the environment was a sort of background. But the anthropologists are very different out of necessity. Because they dealt so much with so-called primitive people, they could understand the culture only in reference to the environment. I mean with hunter/gatherers – you had better know what they're hunting and gathering. And that is going to be a condition of the environment.

When you read Clifford Geertz, John Bennett, Margaret Mead, or Ruth Benedict, you find that these people are really quite understanding about the natural environment, because they had to be. They never really fell victim to the error of sociology: the commitment to dealing with very large abstractions. I think the census tract is really a very amorphous and aggregated way of looking at people, whereas the anthropologists have always believed in key-informant interviews, close-up studies, field observation, and subsequently questionnaires. I am much in favor of this idea. I early developed a preference for anthropology and ethnography because of their commitment to the field and understanding of the natural environment.

BPJ: There was a time when the ecological planning perspective seemed to be emerging as a dominant one -- say in the mid-1970s. One felt that the city planning profession might have been thoroughly transformed by it. Now the enthusiasm has waned, although basic environmental analysis has been incorporated into conventional planning procedures.

Do you think that ecological planning has been a casualty of the conservative swing in American society in the last ten years, and do you see any hope that in the future it will recapture the vigor it once had? I guess I'm asking you to prognosticate a little bit.

McHarg: Yes, and I'm very bad at it. I make no estimate at all. Haven't the faintest idea. But what has happened is very clear. There has been a decline in the whole of planning. City planning has received a pretty bad reputation: a little of it deserved, I think. But environmental planning hasn't suffered quite so badly. It's now institutionalized – I mean, the Environmental Protection Agency, the necessity of doing environmental impact statements. That is all original, and rather recent, and it still continues.

BPJ: But you're right about city planning being defensive right now. It's become rather pragmatic and cautious. It seems to me that the idea of planning has gone into a kind of retreat at this time.

McHarg: I think that's absolutely true.

BPJ: I associate it with the resurgence of free-market perspectives, and the notion that there is something dangerous or even inherently wrong about assuming conscious, rational control over the direction of society.

McHarg: It's one of the most extraordinary paradoxes in the world. I mean, there isn't any question about the Defense Department – they plan. There isn't any question about enormous corporations planning. And why planning should be perfectly acceptable to large corporations and large government institutions, and yet be anathema to these same people when the same kind of planning is performed in the public realm, I can't understand at all. But it certainly is true, and it is undoubtedly a very pervasive view within this government at the moment, that planning is antithetical to economic growth, and should not be espoused with any great zeal by any unit of government.

BPJ: They succeeded in making the case to the public that planning somehow ruins economic growth, and it seems that planners will have to counteract that perception if they are ever going to do any serious planning in this country.

McHarg: During which time, however, environmental planning is proceeding. I think this is because the environmental problems which we confront are so serious that they can only be resolved by excellent scientists who are capable of making prognostications about the consequences of contemplated acts. For example, look at the procession of people who have been talking in my course here at Berkeley – John Holdren, John Harte, Peter Gleick, Robert Colwell, Luna Leopold, William McKenzie, Harold Johnson, Roderick Park, Donald Kaplan, William Lidicker, Orlando Alvarez – about nuclear war and nuclear winter, ozone, any one of these problems. It's very clear that there is a good deal of research being done, and that very good minds are addressing these problems.

So, I'm not at all distressed about the allocation of human intelligence to dealing with environmental problems. That continues to grow. Now, how much of this is actually going to impinge on public policy is another question. But, I think that this is unlike city planning. In the environmental field, there really is continued growth. There are more and better people engaged in the study of the environment and the environmental consequences of human actions than ever before.

When I started 25 years ago I found it all but impossible to get a legitimate natural scientist to work along with a landscape architect or a planner. And now there is no embarrassment about this at all. I can

in my private practice expect to associate with only the most distinguished natural scientists, because they now believe that these environmental problems are very serious ones.

BPJ: So there are gains that we shouldn't ignore.

McHarg: That's right, there are real gains. No longer do you hear the unbelievable observation that ecological planning in the United States is limited to the Department of Landscape Architecture at the University of Pennsylvania. I mean, with problems of such seriousness, obviously it should concern the biggest scientific departments in the greatest universities, but in the past this was not so. However, it is now so. So we come to the University of California at Berkeley and we find geochemists, geologists, hydrologists, ecologists, energy specialists, and so on. On this campus alone, there are very large numbers of distinguished people who are committed to investigating and resolving the problems of the environment.

I've found this a very heartening matter indeed. It's disheartening, though, that these scientists are still outside the mainstream, that they are aberrants, as it were, in society. But nonetheless, they have become rather more powerful aberrants: I mean loud, strong, and very authoritative voices.

BPJ: One of the reasons why your writings were so influential was their sharp, critical edge. Like Lewis Mumford, you were not afraid to attack modern industrial society at its roots, to go to the foundations in values, historical traditions, philosophical assumptions. Do you think that this critical dimension has faded within the planning field in recent years?

McHarg: Yes, and I have a kind of explanation for this. During the 1970s, the intensity of young people's concern for the environment was enormously gratifying and fulfilling. I remember on Earth Day in the city of Philadelphia that 30,000 people gathered in Fairmount Park. Unbelievable. There were a lot of passionate spokesmen – Barry Commoner, Rene Dubos, Paul Ehrlich, George Wald, and myself. And we had enormous audiences. As a matter of fact we were created by these audiences. There was suddenly an enormous interest in the environment, and those few people who had cared about it and were willing to speak about it were mobilized and trotted all over the country to engage in speeches, all of which were really affirmations. The content of the speech really wasn't important at all; it was merely that someone would stand up as a rallying point to allow large numbers of people to affirm that they cared about the environment. The popular feeling selected the speakers, created an enormous furor, and the politicians responded.

Now, I think something happened, and it may have been the Viet Nam War, it may have been Biafra. There were a number of events which were really very large, very calamitous, and people found that they were unable to intervene in any beneficial way at all. I know this is certainly true with respect to my own students. At a certain point in the middle seventies there was a contraction, and people concluded that they couldn't deal with these large global affairs anymore, that they couldn't deal with remote tragedies in which they couldn't intervene in any beneficial way.

BPJ: There was a numbing effect?

McHarg: Yes, they were numb. They all contracted into a smaller area – friends, family, immediate associations, planning problems which were comprehensible and with which they could deal. And I think this is probably not a bad response. I mean, if you can't possibly intervene, if you can't do anything except send a check to the Red Cross, then you are going to have to close down. You can't really deal with this pain all the time without any possibility of any remedy. And that may just possibly be an explanation.

The major spokesmen of the environmental movement of the '70s could expect audiences of 5,000 back then. Now you expect audiences of 500. And, that's an enormous change. I don't think the possibility exists now of being popular in the way Paul Ehrlich or Rene Dubos were then. There isn't the enormous, receptive audience outside to address. And I don't know when the change will come. Perhaps some calamity, some very large calamity, will galvanize interest. But the missionary zeal doesn't have as large and receptive an audience as it once did.

BPJ: Professions often have difficulty accommodating social theorists like Lewis Mumford. People who articulate broad visions of an altered society have often been outsiders. The demands of professional training tend to force out highly critical or utopian thought, because it can't be applied immediately, and may generate conflict with powerful social groups.

Do you think there is some way that professions can avoid this intellectual narrowing? In your writings you have criticized the professional myopia among city planners and highway engineers. How do you deal with the issue of training useful practitioners, while leaving room for wide-ranging social analysis?

McHarg: Well, actually that hasn't been a problem for me at all. It took me a long while, I think, to realize that what people like Patrick Geddes were talking about was planning for human health and well-being. Artifacts were really not so important from their point of view. I

can't remember who said it, but the idea is that a healthy family or a healthy institution seeks and solves problems. The ability to seek and solve problems is at once a measure of the ability to adapt successfully, and also reveals the health of the person and the family.

So this idea of planning as an activity by which people adapt successfully, and further their health and well-being, is a marvelous model. *And it is a wonderfully idealistic one.* We can understand how this applies through the World Health Organization; they eradicate smallpox, and this is a triumph for the world. It seems to me that planning really has to have the same view, and it certainly did at one time. The planning I am referring to – and I am by training an orthodox city planner – is that of Patrick Geddes, Patrick Abercrombie, Thomas Sharp, Gordon Stevenson, and others of that mold. There were the great reports which were done in Great Britain around World War II: the Scott Report, the Uthwatt Report, the Barlow Report, the Beveridge Report. All of these were motivated by a desire to improve the human condition, in which the physical environment was a component. I think this is a fantastic idea, it should never have been abandoned, and if it has been abandoned it should be rediscovered.

I also think that now this conception of planning has much more meaning. Geddes' concerns were similar to those of modern epidemiology. But now we know a good deal more about the effects of the environment on human health and well-being, and we can use the preconditions for human health as a program for planning. So, it seems to me that there is no need to make excuses for either enthusiasm or idealism: they are fundamental to the emergence of the profession and, it seems to me, indispensable to its future success.

BPJ: But students experience many pressures to train for an immediate job, and both the idealism and the historical awareness that you describe are often pushed aside. In addition, economics has taken over more and more of the planning curriculum.

McHarg: Well, economics is a very deadening science, and economics is the dominant perspective in city planning today. Sadly, economics excludes the most powerful human concerns and energies – love, justice, beauty, compassion, patriotism, family, and, not least, evolution and adaptation. I think the dominance of neoclassical economics and econometrics in city planning has been very deadening indeed. Well, two things have happened. First, the divorce from the actual physical environment. The early city planners were concerned with forming the physical environment. These planners had many weaknesses, but nonetheless they could be informed by social scientists as they prepared their plans.

But at a number of American universities – I saw it happen at Penn, Harvard, and several other places – a situation developed where the physical environment was deemed to be sort of dirty and workmanlike, and contrary to preferment and promotion in academic circles. There was a schism between the disciplines concerned with planning the physical environment and the social sciences. Now, I think that both are absolutely dependent upon each other, and the loss of this connection was a very sad thing and a significant loss.

BPJ: Here at Berkeley, social-science-oriented planners still share the same building with physical planners and designers, so there is some interaction. But at some universities the city planning department is quite separate from the departments of architecture and landscape architecture.

McHarg: I mean, the bloody thing should be absolutely continuous. We need to be concerned with both the microcosm and the macrocosm, and we need to have all these people associating with one another. Of all the things you can say about planning, one thing is certain: it can no longer be done by one person. And if you can determine what the planning problem is, then that determines the disciplines that must be involved in the solution to the problem. People in these various disciplines have got to be able to speak to each other. If we have social scientists who haven't the faintest understanding of architecture, landscape architecture, and ecology – and if the opposite is true, with physical planners knowing nothing about the social sciences – then we have madness in both cases.

BPJ: If we acknowledge the deadening effect of neoclassical economics, we might also want to ask whether an earlier generation of physical planners was resistant to the valid insights of sociology, economics, and anthropology.

McHarg: Well, in the beginning, at the two places I know best – Penn and MIT -- there was a good connection between the architects and city planners and the social scientists. And Perkins's plan for Harvard really was that the planner was an applied social scientist, but most of the people he recruited into planning had first degrees in architecture and landscape architecture.

I don't know whether the interdisciplinary ideal can be retrieved or not. One of the big problems, of course, is the university, where in order to be able to get preferment you really have got to address the rules for academia, and, for the social sciences, that's publishing and research.

BPJ: Do you think that many professors have allegiances to their specialized fields which are stronger than their allegiance to "plan-

ning"? Are they more concerned about how they are being judged as economists or sociologists than with their contribution to city planning?

McHarg: The situation at Penn was very clear. There were three kinds of economists. There were legitimate economists in the department of economics. Then there were quasi-economists in the department of regional science. Finally, there were pseudo-quasi-crypto-economists in the department of city planning. The pecking order was absolutely unbelievable. And of course, transposed in terms of social utility, many of the economists and sociologists in planning at Penn were far more socially useful people than either the regional scientists or the *echt* economists in the economics department. But nonetheless, in terms of academia, there is no question about the rank order. That's a serious problem, because obviously the city planners -- the sociologists, economists, and others pursuing research within city planning departments -- had to aspire to meet the standards set by the university at large. And this they did, of course, to the detriment of city planning.

BPJ: So here was a case of academic compartmentalization doing damage to what could have been a very dynamic interdisciplinary field.

McHarg: That's right. And of course this is also true in the natural sciences. Any natural scientists who concern themselves totally with whole systems will not be promoted. And so these poor chaps who want to do this have got to keep an eye on the necessities within their discipline for publishing and getting accolades, and they can't commit themselves too much to whole systems because this will harm their careers.

BPJ: We've talked about the problems of planning education, and of putting together an interdisciplinary approach: if you could reformulate or alter a city planning curriculum, how would you do it?

McHarg: I'm not sure I can answer that question. How would one do it? Five years ago, after the last dean retired, I was the faculty choice to be dean at the School of Fine Arts at the University of Pennsylvania. After analyzing various pros and cons, my wife and I concluded that I really didn't want to become dean. So the question was, how could I pose this in such a way as not to be ungracious. At that time, the president of the University of Pennsylvania was a planner by the name of Martin Meyerson. Once he was a Vice Chancellor here at Berkeley. He and I had gone to Harvard together so we had known each other for a long time. Anyway, in order to graciously "decline" the nomination, I had to pose conditions to Martin which I knew he

couldn't possibly meet. So I said Martin, I will permit myself to be considered a candidate for dean if you meet the following conditions:

One, that we create at the University of Pennsylvania a Center for the Human Environment, and that we identify publicly that everybody in the University of Pennsylvania – from medicine to engineering to law, and the arts and humanities, any single subject at all – will be allowed to become members in some way as long as they are concerned with studying and modifying the human environment to make it a more gratifying and healthful place. We will form an association so that there will be engineers concerned with the environment, lawyers concerned with the environment, doctors, physicists, chemists, geologists, biologists, and so on. Whoever is concerned with the environment in some portion of scientific or university life will have some kind of appointment. And out of this association, we will then constitute more specialized streams.

There is no single planner for the environment. So I advanced the idea of a shared context within which there will be specializations. There will be a major attempt to introduce everyone to the context of planning: that is, you've got to know something about the physical sciences, something about the biological sciences, something about the social sciences. Then, within that context, you assume a more specialized role.

To which Martin replied: Ian, as we can expect, you have given us a challenge. Unfortunately, the University at this time is unable to meet your demands.

But I think that something of that sort really is necessary. The titles we have at the moment are obstructive. The divisions we have are obstructive as well, and there has got to be some umbrella which really permits the assembly of all the people who are in fact concerned with the environment, but who in many cases are acting individually, and in some cases at cross purposes. We need to create institutions where the brains and intelligence will, in substantial proportion, be directed toward understanding and managing the human environment. That would be the key to some kind of success. Will it ever occur anywhere? I haven't the faintest idea because universities are absolutely devoted to compartmentalization and strong disciplinary divisions.

BPJ: They have their little fiefdoms, which are defended tenaciously.

McHarg: Reductionism is the way, and the department is the instrument for reductionism. I don't see how this can be overcome. I don't see any prospect, although something like the scheme outlined above would do it.

BPJ: If you had that interdisciplinary umbrella, would there still be an entity called "city and regional planning," with a particular focus on existing cities?

McHarg: Absolutely, no question about it. I think that it's a perfectly legitimate discipline, but as you can see, it has to draw upon many relevant fields. There are going to be people who are concerned with physical and biological science, others concerned with social and economic factors, but there has to be some way that they associate. There is a certain amount of overlapping, and everybody should have a sense of being able to turn to allies for solutions to problems.

The planning task is too much for one person or profession. As I said earlier, planning really is a process which involves the skills that are necessary to resolve the problem, and today this has to be a collaborative effort among many disciplines. Nobody can possibly encompass all of the disciplines, all of the knowledge which is going to be required. But people must have some credentials to be allowed to play in the game at all.

BPJ: So you would require planners to be conversant in a broad range of environmental disciplines, whereas it's possible now for a planner to be quite ignorant of natural science and environmental analysis. The typical response is, "That's not my specialization." In your view, it's so fundamental to understand how human settlements are dependent upon the natural environment, that the idea of producing a city and regional planner who doesn't know anything about ecological systems is preposterous.

McHarg: Well, you insist on graduation that they never open their mouths until they associate with those people who can advise them what to say.

BPJ: Well, more than a few plans have been based almost entirely on economic analysis, with a pronounced disregard for the character of the land and long-term ecological impacts.

McHarg: The performance of the World Bank and the Agency for International Development (AID) are wonderful testimony to this. And some of the biggest calamities in the world – the devastation of the Amazonian rain forest – are attributable to the World Bank. It's unbelievable. I've told them that they had better study the ecology of these places before trying to plan for them. And I only had one success. In only one place did they ever hire an ecologist. This concerned the future of Somalia. They hired a great South African ecologist. But even he couldn't persuade his colleagues that you should understand the environment before proposing major interventions. The World Bank, of course, has been absolutely calamitous. I mean, the things

that have been done are terrifying, the incredible environmental destruction, and the case is similar with AID. These bloody economists who know nothing about the environment insist on making a mess of the investments and perpetrating very expensive and deleterious changes.

BPJ: Let's talk about the problems of values in the planning process. I have always sensed this desire on your part to remove as much unnecessary ambiguity from the planning process as you can, and yet the area of values is precisely the area in planning where it is difficult to do that. There is a tension in your theory between the desire to make planning scientific and the desire to avoid imposing solutions on the public.

McHarg: Tension is a kind word, by the way. Contradiction is what you really want to say.

BPJ: OK. You obviously have a profoundly felt sense of values. At the same time you are quite aware of the danger of planners imposing values on the community. As part of your planning process you explicitly want the particular values of various regions and localities -- the diversity of all the world's cultures -- to be expressed. Almost everyone agrees that this is a legitimate consideration. But how you go about doing this is more difficult.

McHarg: The real problem that you have posed is, What does a planner do if he finds out that the needs, values, and preferences of the people for whom he is planning are antithetical to any kind of ecological view. For me, the resolution is that the planner only proposes and doesn't dispose. You only propose. The planner's role is to show what the consequences are likely to be of certain contemplated actions.

It helps a good deal if he makes sure that he is aware that different constituencies are going to be impacted and that they have different value systems, because the impacts will be different in every case. At that point, in a democracy the majority rules or should rule. The planner's professional role begins and ends with showing people what the consequences are.

The planner can venture opinions. But I think there is a distinction between the professional planner and the propagandist. And I have solved this in my own life very simply. There is no question that I am a propagandist. I go around and give speeches and I am a shameless, absolute advocate of the ecological point of view. But I think there is a distinction between being a propagandist and being a professional planner, and I separate the two roles in my own activities.

BPJ: A true ecological ethic would also require that future generations be factored into the equation as well as current interest groups.

McHarg: One hopes that there will always be people around who will consider the long term, and clearly, in a good and proper world, there would be *both* radicals and conservatives. I mean we need both. But conservatives should be, in fact, conservative. They should act prudently. Unfortunately our conservatives are the *least* prudent.

BPJ: They're really nineteenth-century liberals, laissez-faire economic liberals.

McHarg: Yes, they are.

BPJ: City planning is always involved in political debates, and typically the spectrum is divided up into Left and Right: socialists, conservatives, and liberals. Do you see any inherent affinity of ecological planning with any place on the political spectrum?

McHarg: None at all. Absolutely apolitical. Concerning the environment, a soviet manager can be just as despicable as a capitalist. Lake Baikal and the Caspian Sea in Russia are being treated just as badly as we treated Lake Erie. No, I think there's absolutely no distinction at all. Even those in the political middle, the socialists and social democrats – Switzerland, the Netherlands, Britain under a Labor government – the attitude in the main is indistinguishable from the conservative governments.

BPJ: In environmental policy.

McHarg: Yes. The British government, irrespective of the Labor Party or the Conservative Party, dumps low-level radioactive waste into the Irish Sea. I mean, Britain has done absolutely terrible things. And consider the Swiss dumping chemicals into the Rhine, and the Germans. No, I would say that I can't make any distinction whatsoever. I suppose the only distinction that could be made would be, that the more primitive people are, the less likely it is that they will cause environmental degradation. But in terms of political coloration, no distinction whatsoever.

Of course, I think that one of the great fallacies in human affairs is the assumption that there is one best solution for all people in all places and all times. I think that's absolutely wrong. Nothing that we can see in the rest of the natural world conforms to this. If we deal with plants and animals and microorganisms, we know that they are absolutely specific to place. And that the environmental problems posed by that place then select for the ecological processes and creatures which are adapted to that particular environment. We speak

about the plants and animals in the desert, tundra, taiga, savannah, or the rainforest. We are talking about processes of adaptation, but there are going to be processes of adaptation which are specific to particular environments. This is the particularity which characterizes ecology.

If we consider social relations among animals, variety is also evident. Certain animals are anarchists: I mean polar bears never associate, they only meet for breeding purposes. There are monkey societies which are a kind of benign paternalism. There are some less than benign. And there are absolute despotisms, such as the social insects. We find anarchy, something near to democracy, something like paternalism, matriarchies, and patriarchies -- each of these appropriate to different animals.

The question arises: Should there not be different kinds of governments appropriate to different *people* and different *times*? It may be evolutionary or it may not, but even this most cursory examination of animals suggests the illusion of there being one system which is the best of all possible systems for all people and all times. It might be more helpful if we had the ability to look at people and ask: What is the most appropriate organization for these people in this environment at this particular time?

It has been said, for example, that complex and authoritarian and despotic systems were caused by the necessity of managing irrigation systems along the Tigris and Euphrates Rivers. It has also been said that monotheism is comprehensible in terms of shepherds, and that pantheism is comprehensible in terms of farmers. I think that it is worthwhile to investigate appropriate attitudes, values, religions, and governments, not as constants but as variables. There will be a form appropriate to a place, a people, and a time. I think that this is a useful way of looking at it.

BPJ: I imagine that you have a sympathy, when circumstances permit, for democratic systems. Don't you think that there is something inherently more appropriate about a democratic system?

McHarg: I know. I'm a democrat by instinct. I'm a liberal democrat by instinct. Yet on the 2nd of September 1939, I volunteered to become a member of the armed forces, in which I joined a despotism and relinquished all of my freedom and individuality. I lived in a despotism for seven years, but I lived in it voluntarily. It seems to me that there may well be circumstances where despotism is, by agreement, the only way, as in times of grave crisis. God knows, I don't want to become an advocate for despotism. The burden of all of this is that, I think we're wrong in assuming there is one form of government, one

form of social relationship, which is the best for all people in all places at all times. I think that's wrong.

BPJ: It seems that there are implications in that for planning, too, in that planners have difficulty handling the diversity that is present in human societies. That has to be actively cultivated. We often want to reduce complexity in order to make problems manageable. The lesson of your biological metaphor is that a planner must be able to accept that sort of diversity, and plan accordingly.

McHarg: As a product of one of the more homogeneous societies in the world, I revel in the ethnic diversity of the United States. I mean, everyone who travels around Scotland realizes, in Burns's words, "We're all Jock Thompson's bairns." There is no aristocracy, no very very poor. Everybody is thought to be just the same. "A man's a man for all that," as Burns said. I mean an absolutely egalitarian view. Anybody who steps above the ruck is going to have his legs cut from under him. I think that the opposite is a wonderful condition, where there really is visible diversity, and along with that enormous richness. And the ethnographic view cultivates the ability to distinguish that there are people who have a communal identity, who have shared values.

BPJ: So a planning based on ethnography would be a planning for diversity, whereas a planning based upon simplifying abstractions is a planning that will lead to rigid solutions.

McHarg: Well, it's an impoverishment of solutions. And I think one of the great things about this diversity is that, given different preferences and values, certain things which are anathema to one group are in fact gratifying to another. A perfectly good example: a little suburban area in the metropolitan region of the City of Philadelphia, where there are three contiguous towns. One of them is very remote, lacks public water and sewer, and has very few social services. The next one has a tiny little sewage system and some social services. And the third one, nearest the city of Philadelphia, is very well-developed indeed. It transpired that the last of these wanted growth in order to be able to amortize its water and sewer and for other reasons. The furthest of them wanted none of it at all. So they actually formed a little tripartite arrangement where, under the fair share doctrine of Mt. Laurel, they allocated all the multi-family growth to the one with water and sewer, a very small amount of this to the second, and none at all to the remote town lacking public infrastructure. That's a perfectly good arrangement, if in fact it has the consent of all the people, which in this case it certainly did. And it gratifies them. Here we have a solution which is possible because of the distinct values of three different groups. If you had assumed them all to be an aggregate, and had distributed all of the growth coequally, there would have been less

gratification for each of the members. So I would say, the more you can discriminate, then the better opportunity you have of allocating resources and accomplishing the greatest amount of gratification.

BPJ: Christopher Alexander has a pattern in his Pattern Language called "Mosaic of Subcultures," and he thinks that cities should be a cluster of discrete but accessible neighborhoods, each with its own special character.

McHarg: The city of Philadelphia is incredible in this regard; I don't think there is a single ward in the city of Philadelphia that does not now have a dominant ethnic group. To assume them to be an average, to be able to deal with the city in terms of the attributes of the aggregate, is absolute nonsense. The diversity of preferences within groups is very large.

With handicrafted mapping it is very difficult to explore different alternatives based upon different value systems, but once you digitize the data on a computer, showing alternatives is very easy and cheap. I think that's an enormous breakthrough. The prospects for a fully democratized public planning process really can be enhanced by television and the computer. We could take any proposal anybody wants to make and identify all of the people who are going to be impacted, determine their hierarchy of values, and then assess the costs and benefits of the proposed intervention on each constituency. Ultimately, that could be the basis for a referendum. All you need is a television system, a computer, and telephones; everybody who wants to can phone in their position on the matter in question, saying either yes or no.

BPJ: That's interesting, because sometimes the computer has been linked with centralized power and homogenization. Your position is that the computer vastly increases our ability to accommodate social diversity. At least, it can be used that way.

McHarg: The possibilities are enormous. I make few predictions, because it's something I don't do well, but I would say that the chance of television stations becoming as cheap as radio stations is real. And if they are, it's possible for municipalities to have their own little television stations. At the same time, powerful computers are becoming cheaper. Computer applications that I'm talking about now, which need an Intergraph costing half a million dollars, will probably be done by PCs costing $2,500 within a decade. So that the possibility of having the information digitized and available, the possibility of being able to display this on local television stations, and then conducting a telephone referendum, really does allow the planning process to be thoroughly democratic.

BPJ: A lot of people, it seems, could play the planning "game." If the technologies become affordable, more people could perform some of their own designing and planning. You wouldn't have such a thorough domination of expertise armed with expensive technology.

McHarg: I couldn't agree more. Of course, planning is going to work when it stops becoming the exclusive preoccupation of a very small number of professionals. I mean, planning, obviously, is a most important human activity. It's concerned with survival, and successful adaptation, and so it *should* engage more people.

BPJ: If these scenarios unfold, then planners may have to learn a new role. I mean, planning might become less of an esoteric, bureaucratic activity, restricted to planning offices and occasional public hearings. It wouldn't be such a one-way process, with the planner producing the plan and then everybody else just voting on it. It would be more of an interactive process.

McHarg: Absolutely. All that's worst in planning was epitomized by the highway planning method. The engineers produced the plan, and then it was submitted for a public hearing. That was the extent of public input.

BPJ: That's still the classic process.

McHarg: Yes. They should have stopped and done it the other way around; I mean elicit from the people their preferences and desires, find out about the environment, and then produce a solution that is responsive to the existing opportunities and constraints. But I think you're right: that planning is too often the production of a plan and then a public hearing: obviously, the wrong way.

BPJ: What happens when you have technical experts evaluating a controversial planning issue, and prestigious groups take opposite or differing views on the issue? What happens when you have a head-on collision of expertise? In such cases, people who are not experts are often befuddled; they don't know how to sort the issues out, they don't have the time or resources to master the field in order to assess the complex arguments.

McHarg: You know, I've never had that. I'm sure that it has happened, I'm sure that it will continue to happen, but it's never happened to me. Because I've been awfully frightened about being taken to court on so many occasions, I determined that whenever I possibly could I would get the very best scientists for my projects. I have tried very hard to be get people with unassailable reputations. That's very useful. And I have not had these controversies.

Where there is legitimate controversy, I think that the general rule governing governments should hold. Although scientists insist on irrefutable information, governments have to settle for acting prudently on the basis of the best available evidence. If you don't have conclusive evidence, then act prudently on the basis of the information that you do have.

BPJ: For example, don't make massive, risky technology investments if you don't have adequate information.

McHarg: The Constitution specifies that agencies of government are required to protect the health and welfare of their citizens. As long as that's true, then, prudence is required. If there is a controversy, and one side says that something is going to be dangerous, and the other side says that something is not going to be dangerous, I think government has got to assume that if there is a reasonable possibility of it being dangerous then it should not be done. The health and welfare provisions require the government to act prudently.

BPJ: Nevertheless, there are battles -- over nuclear power plants, for example -- where it seems that the arguments for prudence are overruled.

McHarg: But the particular problem with the nuclear industry is that it is almost impossible to find anybody in that industry who is not beholden to the Department of Energy, or before that the Atomic Energy Commission. You have to ask: How objective are the spokesmen?

It isn't, you see, an argument between one group of objective scientists versus another group of objective scientists. On one side, there is a preponderance of very subjective scientists because their well-being and their research money are entirely dependent upon the nuclear industry.

BPJ: In the world of city planning there are so many people with credentials claiming to be "objective." Everybody claims objectivity. And on the grander scale of world ecology and environmental crisis; you have the position of Julian Simon lined up against that of Paul Ehrlich and Barry Commoner. One side says that environmental problems are quite manageable, and that technological fixes are on the horizon. The other side predicts grave ecological crises.

McHarg: But I think you can also review the credentials of the scientists. I experienced this: my particular case was the atomic energy business, the nuclear business. A friend of mine had won a class action suit against GPU, the Three-Mile Island people -- he got a settlement of 36 million dollars, of which 6 million had to be reserved for something called the health fund. The purpose of the health fund was to investi-

gate the circumstances and impacts of the Three Mile Island event, in order to arrive at an *agreed* version, because of the enormous amount of contradiction among official versions.

The problem was, where to find objective scientists in this area: physicists, health physicists, and ecologists, who would not be beholden to the establishment. Ultimately I was able to find four people, who were within the establishment but who had established a long history of objectivity. I mean they had taken contrary reviews on a large number of occasions. That is very difficult, but I still think that it is possible. If you find a group of scientists, all of whose research money comes from one source, which source is a subject of the dispute, I think you cannot view the evidence in the same light as other people who take a position and are not beholden to the industry for their financial support. There is no quick way of resolving this. But I think that if there is a dispute among scientists it is worthwhile looking at the credentials of the people. When you find the industry speaking, and self-interest is involved, I think you have to view the testimony with a certain amount of skepticism.

BPJ: It's clear that you place great emphasis on the expansion of reliable knowledge about urban and environmental systems, but knowledge must eventually be linked to political power in order to shape ecologically sound human settlements. Are you encouraged at all by the emergence of Green parties in Europe, parties which combine ecological knowledge with political action? As a long-term strategy, will something like that be necessary in the United States?

McHarg: The problem of political action is difficult. I find it impossible to distinguish the environmental policies of corporate capitalists from bureaucratic communists or socialist states. They seem united in disinterest. The Green Party may be the single exception to prove the rule. On the other hand, I am impressed with the political power of the grass roots environmental movement in the '70s and the anti-nuclear cause in the '80s, notably Physicians for Social Responsibility. I support Audubon, Sierra Club, Natural Resources Defense Council, Friends of the Earth, Greenpeace, etc., etc. Although it is fair to say that, while they began with distinguished scientists as spokesmen, they are now lobbyists.

I fear that my trust continues to lie with information. In a democracy one must abide by the decision of the majority. However, good judgment needs good information; information is power. So I prefer to advocate the acquisition of data, improvement in interpretation, modelling, increased capability to predict the environmental consequences of contemplated actions, wide dissemination of these data,

and, of course, the access afforded by television and the utility of the telephone for referenda.

I think, therefore, I will act on the assumption that more and better information widely diffused will produce a better-informed electorate who will act more prudently, irrespective of political coloration.

BPJ: While we wait for the political currents to change, what are the most important things that city planners can do to ensure that their activities contribute to human health and well-being? What should planning educators be saying to the next generation of city planners?

McHarg: I believe that planning practice and education are much too circumscribed. Architecture, landscape architecture, urban design, and city planning are quite small-scale preoccupations. While social scientists in planning have been more embracing – concerned with poverty, race, housing, third world development, etc. – they too have been self-limited, excluding all physical and biological science.

My primary conclusion is that cultural adaptation is the most effective mode for human evolutionary success and that health and well-being in individuals, groups, and institutions is a synthetic measure of such success. The task of planning is to maintain and enhance the conditions providing for such health and well-being. This clearly must include medicine, law, engineering, architecture, landscape architecture: the full range of the appropriate realms of physical, biological, and social science. Planning for the human environment must be more encompassing than the narrow role now employed in city planning and, indeed, by ecological planners. Successful adaptation is the primary evolutionary challenge. "The surviving organism is fit for the environment," said Darwin. Henderson expanded this by saying, "It is necessary for every system, cell, tissue, organ, organism, or institution to find the fittest available environment, and adapt it and the self to accomplish a better fitting." Fitness and adaptation are the primary objectives of planning. The process must engage the full panoply of perceptions and skills necessary to perform this role and achieve this objective.

Indeed, if you asked which instrument of cultural adaptation most directly addresses the Darwinian-Hendersonian challenge of finding the fittest environment, adapting it and to it, surely it is planning. Planning then must give theoretical primacy to ecology, evolutionary biology, and epidemiology and build thereon.