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## BOOK REVIEW

### JAGE-R103

***The Essential Ian McHarg: Writings on Design and Nature, 2006*, edited by Frederick R. Steiner. Washington: Island Press. 164 pages.**

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I opened this book to a flood of memories associated with being a young garden designer, studying horticulture science at a Canadian university in the 70s. We design students were permitted to draw in the studios with landscape architecture students in their new Landscape Architecture course. These hours were about art and style and if anyone had suggested there was a space for my plant knowledge in those design studios, I would have been surprised. It was almost 20 years later that as a new academic in an Australian college I found myself teaching landscape graphics, garden history and design, and plant identification. A colleague passed me *Design with Nature* (1969) and many thousands of miles from Pennsylvania and “the man,” it inspired me. It made so much sense to work with the existing form and function of the landscape and to integrate our social and ecological spheres through good design. That was the message I took away and that I have thought and taught ever since. Some 40 years after Ian McHarg began his crusade to change the way cities are planned, nature is seen, and disciplines are taught, I can report that applied human ecology — as he advocate — forms the cornerstone of the interdisciplinary foundation subject in my University’s Bachelor of Environments. His conviction that we must rethink our relationship to “nature” is as potent a war cry now as it was challenging then. I and many others owe a significant intellectual debt to Ian McHarg. And that’s the impetus, no doubt, for Island Press’s publication of this book of his selected writings. There are new planners and landscape architects, human and landscape ecologists, environmental engineers and social scientists who were born in the 70s and 80s and who, as professionals, may take for granted McHarg’s basic ideas. Their assumptions that participatory processes are required to change city design and that design should imitate ecological land forms are just two seminal McHarg lessons that have become part of the way we practice. The ethical implications flowing from these basic tenets affirm the importance of the environment as vulnerable, and dependent on our governance, decision making and long term understanding of how our disciplinary practices impact “nature.”

This book is a testament to McHarg’s work and writing. Its ten chapters are a selection from his book *To Heal the Earth*. Steiner has organized *The Essential* into a chronological order and we follow the central ideas in McHarg’s ethos as they develop and expand. Steiner contextualizes McHarg’s life in the Preface. He repeats a part of his tribute to McHarg (2001:20(1): vi) that reflects his sense of loss in March 2001 when McHarg died of pulmonary disease at the age of 80. Steiner’s obituary in the journal of landscape architects notes McHarg’s ability to walk with all manner of people (presidents, Hopi elders, scientists, and everyday folk) and communicate his urgent advocacy of the need for change in our relationship with nature. Steiner advocates the McHarg process for “landscape intervention” (2006:..xx). This involves McHarg’s multi-layer inventory of the elements in the landscape as a system. In effect, McHarg anticipated the power of Geographic Information Systems that by the late 20<sup>th</sup> C were able to construct just such mapping matrices in audit form.

The questions for a review like this are to assess how relevant these writings are for contemporary times. Are the environmental ethics he propounded so vigorously addressed, ignored, useful, or archaic and do his writings still inspire, make us think, and demand attention? In thinking about these questions I discovered two McHarg’s—or rather that his interpretation of “nature” is really two views of nature. There is the nature he associates with the wider landscape outside the urban environment and there is the nature he conceives of as lurking, invisible, often despoiled beneath the city structures. It is this second version of nature that he is really defending, pursuing, and writing about. But to do this he seeks an ideal. Waldo Emerson had ‘N’ature in the pastoral view that no one can own but all can share; Henry Thoreau his Walden Pond to inspire him; Aldo Leopold had Yosemite to remind us to “think like a mountain,” John Muir the Grand Canyon to protect. These are well known standards of “wild” nature outside the city’s grasp.

But inside the city, nature is lost to the planners concerned to provide adequate amounts of housing in suitable sizes and shapes for the various social classes. Frederick Olmsted, the designer of New York City’s Central Park and Boston’s Emerald Necklace established the importance of public open space in the fabric of the city. As Jane Jacobs

was to note (1961), nature was located in such spaces and then abandoned, its purpose lost as the social fabric that gave it life, moved, merged and required new interpretations of what its physical manifestation should be. Jacobs demanded that the built and open space areas of the city primarily reflect the needs of the people living there, integrating a multi-purpose landscape into each precinct. McHarg was perhaps inspired by Jacobs and her associates' ability to rouse public opposition to central planning. Either way, in order to understand McHarg's standard bearing for nature in the city, we need to begin with his ideas about nature outside the city.

In retrospect, this aspect of McHarg appears moralistic and romantic though he would undoubtedly consider himself a hard headed pragmatist. His distain for the poorly planned inward-looking cities on the American plains and hilltops created good and evil scenarios that are necessarily simplistic for the 21<sup>st</sup> C. McHarg made no attempt throughout his life to hide his distaste for poorly planned cities dominated by the built environment and people's social needs. His stories of growing up in Clydebank in Glasgow indicate an early awareness of the loss of nature as an aesthetic within the city. Clydebank was polluted, dirty, and poorly planned. Across the way, the wild heath and hillsides of Craigallion Loch beckoned a young McHarg. He saw the countryside as "safe, with no dangerous animals, no poisonous plants, and benign people. Nature was rich and various and to me represented freedom as it has ever since" (McHarg 1996:3). In his juxtaposing of these two scenes, McHarg clearly stresses the wrongness of the city. In effect he suffers from what Cronon (1995) describes as a construction of wilderness; and how both this wilderness and its nature are a kind of fiction principally subscribed to by those living in post industrial cities. The moralist streak is perhaps a natural outcome of the passion in McHarg's perspective. It is fueled, as Campbell (1996) notes in his review of McHarg's autobiography (*Quest for Life* 1996. NY:Wiley), by a rejection of the dogma in Genesis that suggests "man" has the right to subjugate the earth to his needs. McHarg is unequivocal. There is no such path, instead, our charge is to be "a modest steward" (McHarg 1996:3). This is a man who refers to all of us as "man"—*hu-man-ity*, struggling to conquer the Earth, rather than living with its limitations in mind.

In 1998, I wrote in the South Atlantic Quarterly that it was the moment we saw through the eyes of the astronauts in 1969, Earth circling, that we understood how small we are in the visual sense and how immense is the scale associated with the planet. McHarg in his usual farsighted way had already made that leap, widening his focus from garden design history to the wider landscape of the turbulent American 60s. Erudite and intelligent, he must have listened to the momentous news of the time—about atomic threat and regional conflict that heralded global insight; while at the same time waking up to the realities of post war industrial agriculture and development. His essay *Man and the Environment* (1963), which begins this 2006 book tribute — edited by his former student, sometime colleague, and collaborator Frederick Steiner — brings with it all the excitement of a giant step forward in thinking about the landscape as a continuum (Crowe 1958.)

In Chapter 1, "Man and the Environment," McHarg introduces several of his concerns. He confronts the duality of nature as outside of man. He argues for an ecological and social balance in the planning of cities. He reconstructs garden design history to draw antecedents for designing with nature. It is the duality, he argues, that has allowed man to assume technical and intellectual supremacy over nature with the city as a kind of absurd, out of scale rendition of human habitat as the consequence. Clearly this trend continues, as cities are known hotspots that drive the global environment, "with 78% of carbon emissions, 60% of residential water use and 76% of wood used for industrial purposes attributed to cities" (Grimm et al. 2008:756). McHarg's prediction that the city is an "ecological regression" though it may be a "triumph" as a human institution (2006, p.6), remains salient.

Despite being a well travelled Scot, McHarg's first essay is a very American view of the world in the 60s: "The majority of the population of the Western world moved from an endemic condition of threatening starvation, near desperation, and serfdom, to relative abundance, security, and growing democratic freedoms" (2006:7). This, he argues, is proof that the greatest advance of the 19<sup>th</sup> C was social justice. In retrospect, he was probably attempting to counter what he considered the social determinism of Friedmann and Harris that had focused city design on social equity issues. His argument is to make the case for social justice as part of a relationship with the physical environment of the city. Learning this lesson of interdependence becomes central to changing the way we design and build our cities and interact with nature as a "creative agent in the evolutionary process" (2006:13).

McHarg reflects on the Renaissance view of nature, and its legacy which he thinks of as our modern need to order nature. To do this, he returns to the nature outside of the city, called "wild nature." He argues that "wild nature" is found in the garden history of 18thC English landscape parks. (Arguably Kent to some degree, Capability Brown to a large degree and Repton were literally the architects of these carefully constructed orderings of natural elements to create a picturesque and park-like idyll.) The 18<sup>th</sup> C English landscape movement intended to idealize the laws of nature that British taxonomists and travellers were cataloguing through scientific discoveries and treasure troves found in the Empire's domains. These 18C landscapes are distinct from the Renaissance because the designers (Brown in particular) acted as early naturalists, selecting plants and rearranging woods to "fit" the hollows and flows of the landform. In this way they created images of nature that McHarg connects with peace and sublime experience, where "man can speak to God" (2006, p.9)

McHarg concludes this essay by reflecting on “rationality” in man. The Renaissance was theoretically the rise of the rational being and this was confirmed by the scientific method of the time and reflected in the philosophy of Descartes in the 17thC. MchHarg argues that we have become so elemental and rational that we do not see the system in which we live. At the very moment that we are captivated by understanding the microscopic, we forget it is an element of a bigger system. This is a far-sighted conclusion pre-dating, I believe, the landscape ecology of Forman and demonstrating the potency of MchHarg’s perception of the biosphere as connected to and not outside of the city structures. However, this also leads MchHarg to a kind of expostulatory excess in rejecting the social fabric of the city. He does not admit or admire what Johnson (2001) describes as the self-organizing capability of the city that invokes emergent properties from within—in other words, the city is a complex system too. MchHarg rejects hot dog stands and second-hand cars as evidence of decadence or ugliness, and does not give them credibility as examples of how cultures engender objects and how these use or create spaces within the city. His anger denies the realities of socio-economic difference. He imposes standards of “good nature” by defining the “other”—nature’s absence — as degenerate. It is a severe standard.

In Chapter 2, *The Place of Nature in the City of Man*, written in 1964, MchHarg considered the place of public open space in the urban revival movement. He attempts to broker an understanding between the use of rural land and land for nature in the city. He advocates a common sense approach to landform that would occur before building sites were allocated so that low lying areas that conceivably will flood, for example, are allowed to be wetlands and the backbone of a public open space system. This utilization of form and biophysical function had long been out of fashion by the 60s. Fleet Street in London and Elizabeth Street in Melbourne are examples of where technology and earlier ingenuity were used to bury a river and build an important city road on top. The subsequent flooding in times of what we now call weather events is salutary. Many city planners can be imagined to have heard MchHarg however, with Toronto and Brisbane as examples until recently of keeping those areas green and making them into recreational corridors through suburbs. However, even here, over time, there is evidence that these green wedges are not just public open space. As the city becomes more densely populated, developers mark these valleys as future home sites. Orchards are removed, freeways and toll roads make the first incursions, often overhead, and then it is just a matter of time. MchHarg has proof of the inconstancy of the hu-man.

MchHarg is aware of the constant expansionary edge of cities into rural landscapes. This is an edge we are still trying to boundary in the 21<sup>st</sup> C to assure that agricultural land remains viable and that we can supply the city’s residents with food. In effect, he notes the American experience of the frontier landscape is a distant one. The countryside is experienced from the window of the car on Sunday drives or in retrospect with a sense of loss as a valley is cleared or rural farmland incorporated. Here again, MchHarg emphasizes how the duality between man and nature allows the city to be understood as “‘artifacts’, becoming ever more artificial” (2006:13). To counter this, MchHarg reminds us that we are composed of the ashes of stars and so creations of the biosphere; and he holds up farmers as beings who know their place in the universe as a consequence of their work. Clearly, he had no sense of the industrial agriculture going on in the plains of America and globally, despite plenty of evidence from Steinbeck onwards of the consequences of command and control farming in the Midwest since the Depression era. Even his imagining of the plant community as “relatively immobile...nutrients are cycled through the system in place” (2006:23) seems naïve. Undoubtedly, invasive pests and plants are increasing as a part of the global travel movement, and in the 60s there was not as much awareness of the implications of species from somewhere else impacting on farming, conservation, and recreation values. But his real message is about respecting that some things—good soil types for farming—for instance, are easier preserved than restored; and that similarly, nature as part of public open space is more likely to be self sustaining if protected rather than paved and reconstructed elsewhere.

Ecological determinism, the subject of Chapter 3, written in 1966, builds towards a unification of MchHarg’s now more clearly articulated rage against 20<sup>th</sup> C city design and an urgent demand to reinstate ecology in the city with a kind of affirmative action program. He recognizes an ecological connection between the city and the countryside. As it stands, the city is caught in a time warp where he sees Versailles as the inspiration for design. He points out that such designed order had grave implications for the French Treasury, and eventually the government; but more importantly the city plan as developed under the Renaissance archetype, has become—“an inexcusable prototype for the 20thC.” He deplores the urbanization of America, seeing 55 million acres going under pavement between 1966 and 2000. MchHarg introduces the idea of a “healthy” ecosystem where applied ecologists are able to assess its characteristics: what are “healthy natural environments” (2006:39)—what are its indicators? He worries that we will not know what the proverbial canary in the coalmine is singing about, and in fact may not hear it at all. This chapter and the next one are the beginnings of what to me, are the “essentials” of MchHarg. “No longer is nature an undifferentiated scene, lacking values, defenseless against transformation; it is seen to be a complex interrelated system, in process, having discernible limiting factors, containing values, present or prospective, and finally, containing both constraints and opportunities’ (2006: 37-8).

He describes three case studies that are famously revisited many times in his lectures and writings. In the first, the breaching of the sand dunes in the New Jersey Shore by home building, recreational beach activity, and inappropriate plantings that exacerbated the shape of the dune making the foreshore vulnerable to tide and storm. I am reminded of the David Suzuki program *The Nature of Things* some years ago that showed exactly this outcome along the North Carolina coast. The second case study deals with urban land development in Green Springs and Worthington Valleys near Baltimore but, in this case, the development that was advocated followed the ecological reality of where water was located, avoiding fertile soils, and maintaining slope and forest cover. These, taken together, offered protection against erosion. The third concerns the Urban Renewal Agency in Pennsylvania and NJ. McHarg argued for the “natural morphology” of the metropolis to be the site of public open space and only limited development would occur in such a zone.

McHarg steps back from the divide he has created in his earlier writings, to argue for an ecological engagement that is not about the “preservation” of nature in the city, but about the positive creation of “noble and ennobling cities” (2006:45). He addresses a subject still controversial after 43 years: the artificial divide that science insists on, regarding conservation values in the city as Grimm et al. (2008) also note. There are still few papers on the value of biodiversity in the city (see Andersson et al. 2007) and despite various attempts to focus urban ecologists on community gardens and backyard agriculture, little credibility is given to these representations of nature. This essay acknowledges the social construction of landscape and the interplay between society and ecology.

Chapter 3 and then Values, Process and Form—Chapter 4 written in 1968—are the essence of McHarg. Confident about his thinking, reflecting on his teaching at the Man and the Environment program at the University of Pennsylvania, McHarg addresses the biological scientists at Princeton and at the Smithsonian, presenting his ideas on interdisciplinary human ecology. The same criteria that feature in evolutionary survival apply to form, he argued. The city cannot ignore the biosphere of which it is a part and nature is a process within which we exist. This chapter is the “how to do it” one and one in which ideas about “health” and “fit” are sorted out. The social has to “fit” the ecological system in order for there to be effective integration of the systems.

By 1970 and Chapter 5, Open Space from Natural Processes, McHarg is repeating his ideas about the need for ecology to effectively counter urbanization by providing an “objective and systematic way of identifying and preserving land most suitable for open space...” (2006:62). He recommends water as a unifying element correlated with different land types such as marshes, recharge and discharge areas in a watershed, forests and agricultural lands (2006:73)—examples that show the interaction of rural and urban landscapes. He considers the issue of air pollution and takes up the idea that fingers of open space reaching from the hinterland into the city will provide opportunities for currents to fill the “airshed corridors.” He notes that a central issue in the design of public open space is not its absolute size but its distribution (2006:83). While McHarg probably meant this in terms of its ecological value, this is still an issue of socio-economic validity today. Big parks and green spaces tend to be more abundant in the suburbs with higher socio-economic status.

McHarg finishes with a critique of 70s planning, “which disregards natural processes, all but completely and which in selecting open space, is motivated more by standards of acres per thousand for organized sweating...” (2006: 84), referring to the practice of making developers set aside a required amount of public open space in every block of new housing. In this, he and Jane Jacobs would be in accord, lamenting the isolation and often poor quality of mandatory pocket parks. However, the reality of the 90s in Australian urban land development has been that developers see the benefit in having difficult landscape areas in open space management. It is the local governments that resist the 5% levies of aggregated open space along creeks or wetlands. They do not have the budgets to manage these sites when the developers hand them over.

As McHarg entered his late fifties, he used his writing to revise previous ideas and to goad and cajole the professions of landscape architecture and planning to move as he suggests in Chapter 6, towards Ecological Planning: The Planner as Catalyst. He wrote, “I was taught ...orderliness and convenience, efficiency and economy...these virtues have little to do with survival or success of plants, animals and men in evolutionary time.” (2006: 86). He also argues that the “planner is a catalyst and a resource” (2006: 88) and needs to be able to create the links between social and biophysical systems.

At 61, reviewing his contribution to teaching and learning at Penn, McHarg writes the original version of Chapter 7, Human Ecological Planning at Pennsylvania. The theory of human ecological planning is presented. It is the interdisciplinary moment when planning and ecology come together and create something new, transforming the way we did things in the past. It is time to exit our discipline silos, and strike out for a more integrated approach to designing our cities. He returns to the idea of “fitness” and defines this with multiple nuances including “health, adaptive characteristics, and as problem solving” (2006: 93). He returns to the need to reunite the elements that science has studied or divided into discrete elements (2006: 95). He imagines the evolution of the city from the bedrock up, like a layer cake and “sees” each new layer as various invaders conquer or technology provides another way to understand what is represented there. He argues for a national audit so Americans can know what they have—a nature audit—though it is not clear how to reassemble the component parts except in the rudimentary way

of the layered cake. Importantly for systems thinking, he mentions requesting data at different scales in order to understand the significance of the layers.

In 1997, McHarg is the grand old man of human ecology at the age of 79, when he is asked to write the next three papers. In the first, he reviews landscape architecture as a profession. In the second, he surveys the global conditions and predicts the way a violent nature will impact our cities and destinies. In the third, he returns to the study of ecology as a systems subject and one that is necessarily the foundation for design. Chapter 8, Landscape Architecture, is a celebration of great garden designers—and the linking of their names to Olmsted, Elliot, Burle Marx, and Halprin—great landscape architects. My mind returns to that drawing studio in the mid 70s when there was no connection made between applied ecology (like horticulture) and landscape design (like landscape architecture). McHarg revisits the importance of knowing about plants and plant function in the context of design (2006: 106-7). Thinking about our university's interdisciplinary environment degree, I welcome his argument that environmental science is a cornerstone of landscape architecture (2006: 108). More importantly though for our degree, McHarg is concerned that new generations will not know enough about environmental history nor have an environmental ethic that will direct their practice. In Natural Factors in Planning (Chapter 9), he continues this theme, arguing that in earlier times when we lived in agricultural societies, we had memory and culture to provide an understanding of where we lived. He foreshadows increasing “frequency and violence in climatic events” (2006:111). He bemoans the fragmentation of knowledge through reductionist disciplines; and the fragmentation of government that makes an integrated approach to policy affecting design, more difficult. Yet, there is hope. McHarg's paper on Ecology and Design that concludes the volume is about inclusivity. The city grows, as others are to note subsequently, for example, Cronon, (1991), not outside of its bioregion but because of what the region can provide to it. McHarg argues that ecological planning, his 1960s idea and invention, provides a theoretical and practical method for uniting the bioregion's biophysical and social processes (2006:123). Environmental disasters, exacerbated by man, continue to be a challenge to the way we live in the world. Ecological planning is a way to rethink how the environment relates to the world of design. Art cannot replace ecology he warns those who sit in drawing studios, but we can learn from nature's art. He quotes Darwin: “the surviving organism is *fit* for the environment” (2006:124, my emphasis).

## Conclusion

McHarg was not always the “father of ecological planning” (Butler 1998:97(2)). He was initially a landscape architect and city planner. He was a hard headed, emphatic man who is remembered as being fascinated by the “cellular, microscopic scale of organic growth and adaptation and the cosmic scale of Planet Earth spinning in an endless galaxy” (Corner 2001).

After reading The Essential, organized chronologically and each chapter prefaced by a contextual paragraph by Frederick Steiner, I return to ask whether his writing stands the “test of time.” A retrospective edition like this invites us to both honor his prescience and consider what has not worked. McHarg, saw his profession “as having a historic concern for the relation of man to nature” (2006: 31). A great reader of history as evidenced by his focus on the Renaissance gardens, he had an understanding of science and it fueled his commitment to a global and planetary sensibility that would not allow him to accept the design of a city in isolation from its ecosystem. His essays often look back in order to look forward, asking the reader to know who we are by where we have come from.

Before concluding, I return to the early writings of McHarg to consider how his vision of nature changed as he aged. His initial sentiments about nature are so idealized and so romantic that they seem like the idealized gardens in a picture. His early rambles apparently did not take him through poison ivy or down bramble filled ravines. Farmers were stewards of nature and nature was pretty much contained in their domains and in the “wild” of American frontiers. He invokes a different meaning to “wild” with his Biblical prophecies of flood and drought. The largely peaceful and idyllic nature that breeds calm and introspection and gives values and meaning to place (2006:27) does not have much chance in the city he foresees for the 21<sup>st</sup> C. Trees and parks that are isolated from the larger continuum, are too fragile to survive the inevitable doomsday awaiting disconnected nature. It is a harsh vision. As climate change informs city planning and design, there is some evidence of increased greening on rooftops and “living” walls on skyscrapers; and some local governments are making provision for coastal setbacks so that houses are not so vulnerable to sea rise. After Hurricane Katrina in New Orleans and February 7 “black Saturday” in Australia's forest fire history, we have some idea of the impact of extreme and unpredictable events on our towns and cities. There would be some argument that our vulnerability to extreme nature makes it impossible to design with any certainty. McHarg no doubt sensed this conundrum. His response however is to return to a kind of exhortation “to green the earth...to heal the earth with the greatest expression of science and art we can muster” (2006:129). It is a noble line that speaks to the need for collaborative interaction between us all. Ultimately then, McHarg emphasizes the interconnectedness between our artful imaginings of what nature might be and the science by which we can create or nurture it.

In 1944 E E Cummings wrote, “pity this busy monster, manunkind,/ not. Progress is a comfortable disease.” Ian McHarg was being demobilized from the British Army where he had served in Italy—one of the despairing campaigns of the war—and in 1946 starting out on his new life as a student at Harvard. To the newly arrived McHarg, America must have seemed like a different planet. His eclectic engagement with ideas and his revulsion to poverty and pollution in the city fueled his lifelong environmental determination to change the way cities evolve. Cities, he said then, were not “natural” and he believed they could be better aligned with nature. He invented ecological planning, encouraged interdisciplinary work teams and strove all his life to make his students and audiences reflective about the way we live. In Australia, 3% of the continent is home to approximately 95% of the population. We live as the Sydney architect, Phillip Drew (1995) notes, on the front verandah of the continent, its coastal shelf. We have almost no contact with the source of our food or water supply. Today, Melbourne is approaching 4.5 million people with only 35% water capacity in the city’s dams and storages. Conurbation around the world bring us news of cities like Moscow with 15 million people and highly polluted resources (Saiko, 2001); Venice with air pollution, saline water, and sea rise (Searce 2007); Shanghai with indisputable misuse of resources (Yeung 2001). It seems that cities set in motion things that serve many masters and so we are constantly at the mercy of those who are powerful under these conditions. The nature that McHarg saw in his youthful walks through the Scottish hills inspired him. It was the flagship by which he sought to motivate planners to seek the ecological and integrate the social with the ecosystem in which they lived. But as others have said, notably Arendt (1958) with regard to the faces of hidden power, and Wills most recently on Obama—it is difficult to dismantle structures that have made the abnormal normal (2009:4).

In the 70s, the environmental warriors Rachel Carson, Barry Commoner, Ralph Nadar, and Ian McHarg walked on to the world stage. It may no longer be essential to read Ian McHarg but his writing provides a timely reminder of where we have been, what remains undone, and how we could go about doing better.

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