Landscape planning: A brief history of influential ideas

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Introduction

I am not a historian. I am a landscape planner who looks to the future. Even so, I know that most of the ideas that have shaped my work are old ideas. Recently, I decided to prepare a lecture to pay my respects to people whose ideas have influenced me. In this published version, I will summarize one central and influential idea from each of about thirty people. This is, of course, a gross simplification. Each person produced a complex body of work, but each did one or two things that have had a great influence on landscape planning, on me, and on many others. Towards the end of this piece, I have included some work in which I had a role, mainly to acknowledge those with whom I have had the pleasure of working.

The best definition of design was made in 1968 by Herbert Simon in a book called The Sciences of the Artificial. He wrote, “Everyone designs who devises courses of action aimed at changing existing conditions into preferred ones.” Scale and size matter in how we act as designers. We can work on a small project, such as a house on a difficult site, or we can work on a medium-sized project, such as a new urban development or a new urban park, or we can work on a large scale, for example on a new town or a regional conservation plan. But just because you are skilled at one scale of design does not necessarily mean you can design at the others. I am particularly interested in the design of large landscapes of ecological and cultural significance that are under major pressure for change. Although I think small projects are important, I will focus here on ideas that have influenced how we approach the design of large landscapes.

Landscape planning is, to an increasing extent, dealing with questions related to the environmental crisis of our time. Proposals for large areas and serious environmental issues are more vital than ever, and a review like this may, in my personal view, help the process of discrimination between good and bad ideas.

Early examples: China and Italy

My first two examples are from China during the Southern Song Dynasty. The West Lake of Hangzhou is important because it is the result of a decision in the 8th century to build a very large lake. It is important because it was a deliberate act to create a new landscape on a large scale. This landscape was made primarily for reasons of defense, water supply, aquaculture, and agriculture. In the Song Dynasty it was rebuilt under the direction of the poet and governor of Hangzhou, Su Shi (1037-1101). Over time, it has become considered ‘natural’, a place of great scenic beauty and cultural importance. Emperor Qianlong’s Ten Scenes of the West Lake, a set of poems composed in the 18th century, is learned by all Chinese schoolchildren today. Too many people believe landscape planning is only conservation and reaction, but the West Lake shows that landscape planning includes action with foresight. The big idea embodied by the West Lake is that a landscape built for practical reasons can be designed and transformed over time into a highly valued cultural landscape, and even into one that is primarily assumed to have been the result of natural processes.

The second example is Huang Shan, the Yellow Mountains of southeast China. By the time of the Southern Song Dynasty this area had become the symbolic landscape of Song painting and poetry. It was protected by the Emperor Quinlong (1100-1161), and now 300 square kilometers are included in a UNESCO World Heritage site. To my
knowledge, it is the subject of the first major program for landscape conservation and protection. It is a very important idea that landscape be protected because of its role as a symbol of a culture. Visitors should realize that they are walking through and seeing not just a beautiful mountain area, but also a landscape of great cultural importance.

From the 14th through the 16th centuries, the Medici family was the most powerful in Italy. The family’s leaders are shown in Botticelli’s Adoration of the Magi (1475) as the three kings. They had palaces in cities as well as many villas in the Tuscan countryside. The Medici villas were decorated with paintings that express the idea that the agricultural landscape was the basis of the family’s wealth, and also that it was beautiful. This idea, that a productive agricultural landscape was a beautiful landscape, became very powerful and is still a major finding of many visual landscape assessments.

The 18th century: landscape and style
Many of the great English landscape gardeners and improvers had a similar idea, that the landscape can be both productive and beautiful. A famous example is Stowe, a work by Charles Bridge- man, William Kent, and Lancelot ‘Capability’ Brown. The landscape was productive, with sheep, cattle and deer grazing among scattered clumps of trees. This sort of English landscape has become idealized as a beautiful landscape, and has formed the image that has inspired much of Western landscape design.

Perhaps the most famous English landscape gardener was Humphry Repton (1752-1818). For the large landscapes I am interested in, he had one very important good idea, and is associated with another. His good idea is that each project should be described using two drawings, one of ‘before’ and one of ‘after’ the design is carried out. Repton’s Red Books included watercolor illustrations of his designs with flaps that fold over the areas where changes are planned. When you lift the flap, the new design is revealed. Repton used this direct way to show the effect of proposed changes to the existing landscape.

Another idea, a bad one, is related to Edmund Burke (1729-1797) and his idea of the sublime. “Designs that are vast only by their dimensions are always the sign of a common and low imagination. No work of art can be great, but as it deceives. To otherwise is the prerogative of nature only”. I do not believe that working on a large scale implies a low imagination, or that design at any scale must be artificial and aimed at deception.

At almost the same time, in France, Jean Marie Morel de Kinde (1728-1810) wrote his Théorie des Jardins (1776). His basic position, a very important idea, was that design is managing the natural processes of the landscape. He designed the famous landscape at Ermenonville, near Paris, where Rousseau is buried. This is a design that respects and takes advantage of the natural processes of the site, its terrain, hydrology, vegetation, and drainage. Thus, as early as the 1770s, there was a great debate between two powerful but opposing ideas: as about the role of landscape interventions, a debate which survives today. Are we creating artificial landscapes or managing natural processes?

Thomas Jefferson (1743-1826) was the third President of the United States of America. He decided that the then Northwest Territories of the United States should be surveyed and sub-divided using a square grid. His aim was to encourage settlement, and in the 1780s, he needed an inexpensive way to define the boundaries of homesteads for new settlers. This idea, that the landscape should be surveyed as a grid, was extended westward as the country grew. It can still be seen today by anyone who flies over the country. The shaping of the American landscape owes more to Jefferson than any other individual. However, he was not the first to use a grid in this way. The Roman Empire rewarded its most successful soldiers with rectangular farmsteads, creating the gridded landscape called centuriazione still visible in the Po delta of northern Italy.

Prince Leopold III Friedrich Franz von Anhalt-Dessau (1740-1817) inherited one of the many German principalities and was concerned with its improvement. England was then the most advanced and prosperous nation in the world. English literature, economics, government, agriculture, and landscape were regarded as the model for most of Europe. Prince Franz made extended visits to England to study English ways, and returned home to introduce English ideas and to remake his lands in the style of the English landscape. The landscape of the Wörlitz Gartenreich was developed between 1765 and 1817. It served both to educate in the advanced agricultural techniques of England and to exemplify English liberalism and the ideas of the Enlightenment: it was planned as a didactic landscape. Greek classical architecture was the style for many buildings. Wörlitz had a public library, street trees were all fruit bearing, and each bridge was built in a different way. View corridors were carefully planned. This was the first place in Germany where Jews were full citizens. This is exemplified by the famous view from the Bridge of Tolerance which encompasses both the church and...
the synagogue. Many persons learned new social, physical, economic, governmental, and landscape ideas from the Dessau-Wörlitz ‘Garden Kingdom.’ Prince Franz’s great idea was not to copy a style, but to use the landscape to teach. This is a very important idea.

19th century: public landscapes

In the 1830s, John Claudius Loudon (1783-1843) was the most important landscape designer in Britain. He made his reputation by designing parks and gardens and as a thinker and writer on landscape gardening and architecture. Loudon had an extraordinary idea. He made a landscape plan for the entire region of London. He proposed that there should be alternating rings of city and countryside, centered on the Palace of Westminster on the River Thames. Loudon made a series of exemplary designs that showed how a residence and garden could be different in the middle of the city, in a suburban area or in the countryside. This concentric diagram was his way of saying that people cannot live only in the city, and they cannot live only in the countryside. Both are necessary. This was a very important idea in the 1830s and is still relevant today.

Peter Joseph Lenné (1789-1866) is undoubtedly the most famous German landscape architect. Lenné said: “Nothing can thrive without care, and the most significant things lose their worth through improper handling.” To design is not enough, and to build is not enough. Without care, a landscape loses its value very fast. Lenné had an extraordinary career which coincided with a period of political revolution. His most famous works are in Potsdam and Berlin. At Potsdam, location of the important German royal palaces, famous architects designed the buildings, but Lenné organized the landscape structure. His most important contribution was the central axis, a line about two kilometers long. Everybody else attached their projects to that line. Lenné’s big idea is that a clear and powerful concept established at the beginning can organize enormous design diversity in the future. In 1840 Friedrich Wilhelm IV came to the throne. Lenné submitted a plan for the expansion and improvement of Berlin and its surroundings, including the expansion of the Tiergarten. His earlier plans of 1819 and 1832 for the Tiergarten had drained swampy parts and created winding streams and paths within the earlier geometrical pattern of long straight hunting alleys. The new geometry was more appropriate for quiet recreational pursuits, as was the intent of the transformation of royal lands into public parks. Now, Lenné planned the new parks system for the general public, accessible to all, and this was a very important idea.

Americans consider Frederick Law Olmsted (1822-1903) to be the founder of landscape architecture, and it was he who first used the term to describe his profession. Olmsted was influenced by what he knew about Europe. He is perhaps most famous for the 1858 design, with Calvert Vaux, of Central Park in New York City. But I consider that two of his many other projects represent more important ideas. In the 1860s John Muir and Olmsted and other people had the idea (similar to the idea for Huang Shan 1,000 years before) to protect the most important landscapes in America. They made the studies to create Yosemite National Park, the first in the nation. And today, because of the work of Olmsted and other people of that period, many important American landscapes have been well protected, such as Yosemite, Yellowstone and the Grand Canyon. The second idea associated with Olmsted is related to his work at Biltmore in North Carolina, the estate of George W. Vanderbilt, the richest person in America. This house was set in more than 4,000 hectares of forested mountain land. Olmsted hired a young man, Gifford Pinchot (1865-1946), to head the estate’s department of forestry management. Working under Olmsted, Pinchot guided the earliest efforts at scientific forestry in America. They avoided monoculture and clear cutting and practiced multiple use of the land. They also established the first school of forestry in the United States. In 1914, the Biltmore Estate forest became Pisgah National Forest, America’s first.

When the United States government created the National Forest Service, Pinchot became its first director. He promoted two important ideas that were first applied at Biltmore. The first is to conduct research on scientific forestry. The second is to promote multiple uses of forests: to sustain animal habitat, provide recreation, protect water and air, and also to provide timber.

In 1883, the Chicago-based landscape architect Horace W.S. Cleveland (1814-1900) had a very important idea. Cleveland was the landscape architect for the twin cities of Minneapolis and St. Paul, Minnesota, lying opposite each other across the Mississippi River. At that time, the cities were small. Cleveland persuaded the municipal governments to buy land to create a regional park system long before many people were living nearby. Because they were planning for several decades into the future, the cities were able to buy the land at very low prices. Today, the Twin Cities are large, and land is costly, but they have one of America’s
EBENEZER HOWARD (1850-1928) was a biologist, philosopher, educator and planner who traveled and practiced all over the world in areas of British influence, notably India and Palestine. He had three big ideas. The first he called the Valley Section. As an evolutionist and global thinker he was interested in the interrelationships between people, their activities, and their environment. The Valley Section diagram expresses timeless relationships that are seen everywhere. It begins in the mountains and extends to the coast. At the highest elevations in the mountains, it is natural and usual to find miners; in less high areas to find forests and woodmen; lower to find hunters and shepherds; still lower, peasant farmers and gardeners; and finally, along the shore, cities, and in the waters, fishermen. Failure to respect these human-landscape interrelationships either doesn’t work or requires too much energy and too high a risk, and will ultimately not be sustainable. Geddes’ second very important idea is expressed in the title of one of his plans, City Development: a study of parks, gardens, and culture-institutes. He believed that the primary structure of urban form is shaped by the landscape, and by the planning of parks, gardens, and cultural amenities. Transport routes, and industrial, commercial, and residential areas are secondary and should be guided by the landscape strategy. Geddes’ third important idea is that people need to know about their landscapes. He created the Outlook Tower in Edinburgh in 1892. It was an ‘index museum’, beginning with the universe, and concluding at the top of the tower with a camera obscura, providing views of the actual daily life of the city and its setting in the larger landscape. It was also the center of courses and cultural activities for the public.

Geddes’ objective of an educated public is still a very important idea.

EBENEZER HOWARD (1850-1928), RAYMOND UNWIN (1867-1940), and others reacted against the terrible housing conditions in 19th century industrial England. In that period, housing for the poor and working classes was overcrowded, dangerous, and polluted. Several intellectuals who thought that people should not live like that formed the Garden Cities Association in 1899. They proposed many ideas, the most important of which was Howard’s Garden City concept. The idea was to reduce the size and lower the density of a major city by surrounding it with a band of countryside, and relocating people to smaller new towns. All the areas were to be connected by efficient public transportation. Letchworth was begun in 1903 and is still an attractive suburban town. In the early 20th century, the Garden City became the most important concept for urban development in England, America, and parts of Europe. The idea, a concern for efficient suburban development, and is reflected again in today’s ‘New Urbanism’ movement.

WARREN H. MANNING (1860-1938) worked for Frederick Law Olmsted as a horticulturalist before establishing his own landscape architecture practice. By about 1910 electricity had become widespread, and light tables (drawing tables with translucent glass tops illuminated from below) were invented, initially to simplify the tracing of drawings. In 1912, Manning made the first study that used map overlays as an analysis method, much as we do today. He laid selected maps together to produce new combinations of information, and made a plan for development and conservation in Billerica, Massachusetts. Around this time, national maps of resource-based information for the United States
were being produced and made available to the public for the first time. Manning collected a few hundred maps of soils, rivers and forests and other landscape elements and had them redrawn to one scale. By using overlays on a light table, he made a landscape plan for the entire country, which was published in Landscape Architecture in June 1923. His plan contained a system of future urban areas and a system of national parks and recreation areas. It had the major highways and long distance hiking trails that we now have. It contained everything that a comprehensive regional landscape plan would have today. It is remarkable that Manning did this then, and for the entire country. It is one of the most important, bold, and creative designs in our professional history.

In the 1920s and 1930s, there were important changes in landscape planning methods. These changes were led by the British, including G. E. Hutchings and C. C. Fagg, who were not landscape architects but surveyors and geographers. In 1930, they published An Introduction to Regional Surveying, one of the first textbooks on how to make regional landscape plans. The most important new idea was the recognition that landscapes are systems, with complex elements that are connected to each other. If you make one big change, you will inevitably change the other parts of the system. Landscape planners must have a broad and complex understanding to make an effective plan. One cannot be only a specialist.

Also in the 1920s and 1930s, modern landscape planning began as a profession. Courses were established to train the people responsible for the bureaucracy of planning. Regional Planning, by L.B. Escritt, published in 1943, is about one centimeter thick. If my beginning students would read this book, they would know much of what they need to know. For example, they would learn how to make overlays and how to use them to analyze the landscape for particular purposes. The techniques are simple and effective. In 1947, after electing a socialist government, the British nationalized planning control of all land. They were able to implement a very good planning system very quickly because they had the textbooks and methods to teach the landscape planners.

In the 1950s President Dwight David Eisenhower (1890-1969) decided that the United States needed to have limited access highways to connect all the State capitals. He gave the task of designing these interstate highways to engineers. It was both a good and a bad idea. We have generally straight highways that are fast and safe. But they have often caused serious damage to the cities and landscapes through which they pass. Perhaps most importantly, they have led to the widespread destruction of America’s rail transport system.

J.B. Jackson (1890-1969) was not a landscape architect, but taught cultural landscape studies at the University of California at Berkeley and at Harvard. He was a landscape geographer, who founded the small but influential magazine, Landscape. His big idea was the ordinary landscape was valuable. He explained to Americans the beauty and interest of their commonplace landscapes. Most landscape architects focus on what they think of as special places, and undervalue the usual activities of ordinary people in making landscapes. Jackson began what now is a very powerful movement to value and protect what we now call the cultural landscape – the ordinary landscapes that have coherent character. He began the magazine in the 1950s, when America was expanding so rapidly that there was no time to protect places that stood in the way. It was not until 1986 that the United States established a system to identify and protect cultural landscapes.

My teacher, Kevin Lynch (1918-1984), had a very important idea. He said that planners should understand and consider the way ordinary people perceive their environment before proposing changes. Lynch wrote many books on many topics, but his first and most important work is The Image of the City. For the first time, interviews were conducted to learn how ordinary people perceive and understand the city. Lynch believed that design could make the city clearer and stronger and more understandable. He assumed that a good city form should have an understandable structure and image which is not imposed by designers and planners but derived from the perceptions of the people who use the place.

Philip Lewis [b. 1925] of the University of Wisconsin has spent most of his life studying the northern part of the American Midwest, and has made many plans for this area. The most important and influential is his plan for a system of parks for the State of Wisconsin in 1964. His big idea, supported by his analysis, showed that the corridors along the state’s rivers and streams were the most important places to protect. He was the first to shape a landscape plan around the idea of environmental corridors.

Ian L. McHarg (1920-2001) published Design with Nature in 1969. It is probably the single most influential book in the field of landscape planning. In it he outlines ways in which natural processes can guide development. The book includes several projects on several scales. The one I think is the most important is the ‘Plan for the Valleys’. In
the 1960s, Baltimore was expected to expand into the area known as the Valleys. McHarg and his colleagues recognized that there were many possible patterns of development and studied four alternatives shaped by differing patterns of sewer alignment. They knew that you don’t make just one plan. It is better to make several plans and compare them to help decide which is best. Development was not proposed on the bottomland, so that agriculture could be protected, and not on steep slopes or on hilltops. Development was distributed in compact groups on the gentler slopes and uplands. McHarg and his colleagues understood the relationships among landscape, engineering, the sciences, and development.

Towards the 3rd millennium: computers and conventions

There was a big change in technology in the middle of the 1960s. Howard Fisher (1903-1979) invented SYMAP, the first practical and publicly available computer graphics program. In 1963, he came to Harvard to set up the Laboratory for Computer Graphics, the first of its kind. I was among the initial members of the laboratory. In 1965, when I was a very junior professor, four graduate students and I made the first regional plan using a computer – the Delmarva Plan. We studied an area near Washington, DC, that included the entire state of Delaware, part of Maryland, and part of Virginia. It is a very large area, and the task was very difficult. The maps we produced were not as legible as maps that could be drawn by hand and were criticized for their graphic quality, but not for the analyses that created them. By 1967, we had computer techniques for drawing terrain, vegetation and buildings in perspective. Again, these images were criticized because a capable draughtsman could draw better than the computer. But we knew that techniques would become better and better. We understood the potential of computers in landscape planning.

In the late 1960s, with Peter Rogers (b. 1937) and our students, we made several more landscape planning studies. These studies included complex analyses that modeled the often-seen conflicts between the attractiveness for development and the vulnerability of landscape. Our work was published as A Systems Analysis Model of Urbanization and Change in Landscape Planning (1969). Today, I still think that there are five principal things to consider in landscape planning: systems, analysis, model, urbanization, and change.

One of the early Harvard graduate students, Jack Dangermond (b. 1945), founded the company that made the first commercially successful computer graphic mapping program. Today his firm, ESRI, is the largest in the field. By making and distributing tools for others to use, Jack Dangermond has probably contributed far more to landscape planning than any professor, researcher or professional landscape planner.

Sylvia Crowe (1901-1997) was one of the great English landscape architects. She had a long and varied career in landscape architecture, and was responsible for a very important idea that changed the appearance of a large part of the United Kingdom. Crowe spent much of her career advising the Forestry Commission of England on its forestry practices. She condemned monoculture and the ugly rectilinear block planting that went with it. She advocated planting a diversity of tree species, in patterns that acknowledged the natural ground form. She wrote a report called The Landscape of Forests and Woods (1978). In it, she gives examples of how to approach reforestation with consideration for ecology, economic production, recreation, and aesthetics.

In 1969-70, the Congress of the United States led by Senator Henry ‘Scoop’ Jackson (1912-1983) passed the National Environmental Protection Act (NEPA). This revolutionary law required, for the first time, open public participation, landscape pre-planning, mitigation of detrimental impacts, and public review of all significant planning actions. Lady Bird Johnson (1912-2007), wife of President Lyndon Johnson, had made the beautification of American landscape her public issue. She was in many ways responsible for adding ‘aesthetics’ to the concepts of ‘health, safety and welfare’ which underlay NEPA. These are very important ideas, and have influenced the creation of similar polices and legislation in many other countries.
The new law raised a very serious question. How do you study environmental impact in aesthetic terms? It could not be simply personal opinion. It had to be a methodology. Each American federal agency that managed land was required to develop methods to assess visual impact. R. Burton Litton (1918-2007) of the University of California at Berkeley and Edward H. Stone II of the United States Forest Service, influenced by the work of Sylvia Crowe, responded to the new National Environmental Policy Act (NEPA) for the U.S. Forest Service, the first federal agency to produce a methodology. In 1974, the Visual Management System was introduced. The Bureau of Land Management and other agencies followed with their own visual management systems. As a result, the United States government has several different systems that are often confusing. However, the important benefit is that, in America, every major project is evaluated for its visual impact.

In 1986 a very influential book was written by my colleague Richard Forman (b. 1935) and Michel Godron (b. 1949), titled Landscape Ecology. The 1980s was a period when biological scientists and earth scientists began to work closely with planning and design professionals. In general, the earth scientists understood the landscape, and realized the landscape was likely to undergo major change, but they didn’t know how to propose changes to the landscape. Today, landscape ecology helps to understand the effects of past and potential change by looking at the spatial structure of landscapes in ecological terms. It is an enormously powerful theoretical basis for landscape planning. (Interestingly, it’s descriptive model bears clear similarities to that of Lynch in Image of the City.)

In November 2001 the 47 member countries of the Council of Europe signed a new international treaty, the European Landscape Convention. The convention aims at promoting landscape protection, management and planning and trans-national cooperation on landscape issues. All member states ratifying the Convention agree to harmonize their regulations and policies with its requirements, and “recognize landscapes as an essential component of people’s surroundings, an expression of their shared cultural and natural heritage and a foundation of their identity”. A set of specific measures for landscape management and protection is defined, and a central aim is to “establish procedures for the participation of the general public, local and regional authorities, and other parties with an interest in the definition and implementation of the landscape policies” that are defined in the Convention.

This new treaty has now been ratified by many, but not all, Member States. It is having a profound effect on the practice of landscape planning, as it requires these activities as part of the treaty obligations. This, in turn, is also having a major impact on landscape education throughout Europe, and indirectly on the rest of the world.

**Conclusion**

I will conclude this paper on a personal note. Two people have earned my particular gratitude. They are the late Hideo Sasaki (1919–2000), and Charles Harris (b. 1926). Hideo Sasaki hired me as a young assistant at Harvard many years ago and ‘Chuck’ Harris encouraged my early academic development along somewhat unorthodox paths. In the early 1960s, Sasaki wrote: “The profession of landscape architecture stands at a critical fork in the road. One fork leads to a significant field of endeavor contributing to the betterment of human environment, while the other points to a subordinate field of superficial embellishment.” These are wise words. Unfortunately, much of the landscape profession still stands at that fork. Over the more than forty years I have been active in this field, I observe that we are getting better at understanding the landscapes we are planning. We have much better data and models. In democratic processes, environmental politics are getting more open and complicated, and landscape plans are also getting more complicated. This makes it very difficult for the ordinary person to understand what is going on now, and what might happen in the future. One can imagine a future of global warming, desertification, over-population, water crises, and other potentially catastrophic changes. If we are at the brink of an increasingly serious environmental crisis, it is very important for people to understand the situation and their options, or they will not make vital changes.

This may be our next major challenge – to make more complex landscape planning more readily understandable, in order to broaden public participation, and to improve decision making in support of a more equitable and sustainable future.

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