It's really a park with emptiness below. There's nothing like it.
It brings the atmosphere down beneath the Earth.
Nancy Holt, New York City artist, referring to the McMillan site (Leccese, 56)

Carl Andre's metal floor pieces began to seem to me powerful metaphors for gardens: all flat ground plane and almost no third dimension, yet completely controlling the character and nature of the "empty" space above.
Peter Walker (Levy and Walker 1997, 21)

If the terrace is essentially a level, limited, and dry deck, the subsoil is, by contrast, unlimited and wet, or at least, moist. This recognizes a vertical antinomy between what is dry above and wet below the level of constructed topography, an antinomy that has had great force and amplitude in the history of ideas about the nature of built sites.
David Leatherbarrow (Leatherbarrow, 172)

After the initial visit to the site, the author returned several times during the following months. Just as Olmsted did nearly a century before, he would stand at the northern end and look south, across the vast filter bed plain, neatly punctured with its grid of manholes, guarded by its two rows of towering sentinels. During these visits, the author came to realize that, yes, he was looking at an essentially flat twenty-five acre landscape but he were also looking at the roof of a twenty-five acre building, an abandoned twenty-five acres of industrial machinery. Recalling the filter cells beneath the surface, the site became like a sardine can, whereby peeling the lid back revealed its contents. Once exposed, the underground cells, their columns, the manholes, the cell walls, together with the sand bin towers and service courts would provide clues for developing new design strategies.

During a quiet solo visit to the site in the spring, the author stood at the very center of the site, on the roof of the "building," above the now long dormant "machine." The traffic noises so encroaching at the site's edges were no longer audible. The vastness of the site was apparent. A wind was gently blowing, the silence only broken by the squeaking hinges of a broken filter cell door in one of the service courts.

You stand there at night, you don't see anything.
The sound comes to you and there's a beautiful story in it.
Foxhunter listening to the sound of the dogs, New Jersey Pinelands
(Hufford 1996) (from Potteiger and Purlington)

The story of the place, the layers of history, did come: The men who toiled in the cells below for much of a century. The remarkable feat of the engineers and workers who constructed the reservoir and sand filtration facility, an early use of both non-reinforced and reinforced concrete. The farmers who developed the land before the boundaries of a new District of Columbia even reached it. The Native Americans who roamed the area and the early settlers who followed them. Even the prehistoric animals about which one regular participant in the 2000 community meetings often spoke.

5.1 Carl Andre: 48 Roaring Forties, 1988

5.2 Carl Andre: Installation View, 1990

5.3 The Site: a sardine can

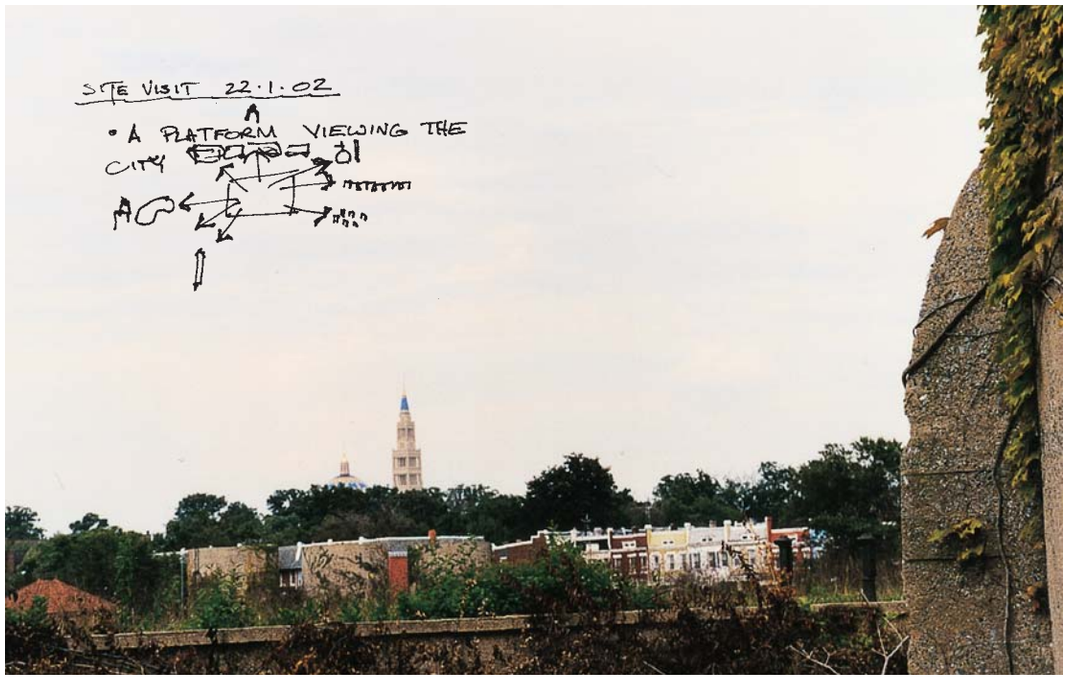
Visitors to the site find themselves on a platform viewing the city. From the site, one can directly see the large medical complex to the north, parts of Trinity College and the dome of the Basilica of the National Shrine of the Immaculate Conception to the northeast, the southern end of the Reservoir and Howard University to the west, and the Washington Monument to the far southwest. The current fast sand filtration plant, part of the original total site, is immediately across First Street and the well-maintained townhouses across Channing and North Capitol Streets complete the view. Despite the near perfect flatness of the platform, it changes levels as the viewer moves through the site and into and out of the service courts. The viewer constantly changes horizontal plane. Both the views, framed or otherwise, and one's experiences (sense of cocoon, immense flat plains) change with location. Given the site's vastness, its verticality seems inconsequential when standing at the edge. Moving through the site, one begins to sense that it is not. With that comes recognition of how much more horizontal and vertical planes will become available as the site is more aggressively opened through design intervention. Jane Jacobs once wrote "even very small squares that are successful often get ingenious variation into the stage sets they provide for their users. Rockefeller Center does it by making drama out of four changes of level. Union Square in downtown San Francisco has a plan that looks deadly dull on paper or from a high building; but it is bent onto such changes in ground level…that it appears remarkably various" (Jacobs 1992, 104)

> *The landscape we see in the built world is a veneer. What we consider solid ground is actually a contrived set of impressions and solutions.*
> (Amidon 2001, 40)

> *In Homeric myth, people were woven together once the vertical parts of place had been sewn into one — that is, once an artificial platform joined subsoil and sky.*
> (Leatherbarrow, 176)

At ground level, the sand bin towers are the dominant vertical elements. Entering the underground filter cells, the vertical columns dominate. They form what is undoubtedly the primary grid of the site, the principal source of unity. The manholes, vertically connecting the "empty" space below with the "atmosphere" above, retain their contemporary role in providing an important surface grid. The vertical cell walls and two service courts likewise form grids. Together, these grids provide the basic organization of the overall site.

When thinking of the grid, the designs of Dan Kiley come to mind. Indeed, Kiley has written about how his design approach was influenced by the allees, bosques and other formal landscape elements he discovered during travels in Europe at the end of World War II. Kiley saw nothing wrong with using classic elements in modern compositions. To Kiley, it was "not about style of decoration but about articulation of space" (Kiley and Amidon 1999, 13). Peter Walker, like in the early works of such minimalist artists as Sol LeWitt, has employed the grid "to manifest the detached regularity of industrial systems and to define a flat plane or dimensional form." In his Burnett Park (Fort Worth) project, Walker successfully employed three horizontal



5.4 View from the platform

5.5 Looking out from service court

geometric layers, the top one consisting of both orthogonal and diagonal grids. (Levy and Walker 1997, 123). During the explorations of the thesis project, this general organization was interesting because of the orthogonal and diagonal grids at McMillan site, formed by the columns and manholes respectively.

Rebecca Krinke has written about how Peter Eisenman used two grids, that of the city and that of the campus, in his design for the Wexner Center for Visual Arts at Ohio State University, to show his notion of the site as palimpsest, writing over writing. With the city grid extended into the campus grid with an 11-degree difference, and additional grids and differing scales thrown into the mix, the viewer is able to analyze the site from a variety of vantage points (Krinke 2001). French architect Bernard Huet's design for Parc de Bercy in Paris was likewise based on the palimpsest concept. There, a city grid was superimposed on the original grid of the historic wine center of Paris. We are also reminded of the temporary installation of a "Necco Garden" at MIT some twenty years ago by Martha Schwartz and Peter Walker where two grids, one an orthogonal grid of neccos, the other a rotated grid of painted tires, were employed to reflect the site's grandeur and formality while revealing its larger contemporary context.

> *I was walking (in Brittany) and suddenly stopped. Between my eyes and the horizon a sensational event had occurred: a vertical rock, in granite is there, upright, like a menhir; its vertical makes a right angle with the horizon. Crystallization, fixation of the site. This is a place to stop, because here is a complete symphony, magnificent relationship. Nobility.* ***The vertical gives meaning to the horizontal. One is alive because of the other.*** *(bold highlight is by author)*
> Le Corbusier 1991 (ed. Corner 1999, 179)

French artist Daniel Buren, in his well-known (and controversial) Les Deux Plateaux installation for the inner courtyard of the Palais Royal in Paris, positioned his vertically striped columns and varied their heights so as to create two imaginary planes

5.6 Stones of Stenness, Orkney, Scotland

5.7 Daniel Buren: Les Deux Plateaux

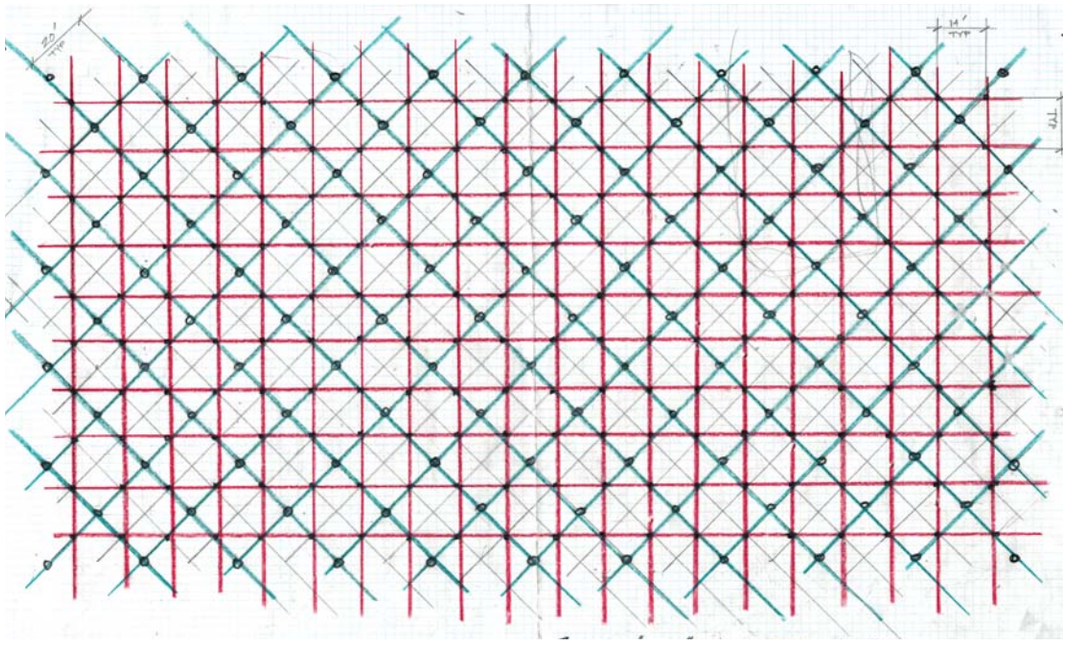
5.8 Daniel Buren: Les Deux Plateaux

and created perspectives that linked his column rows with the columns of the surrounding arcades, and when viewed diagonally, perspectives to the shaded, more intimate corners of the court in contrast to the large sunlit court itself. Buren's Palais Royal project led us to his subsequent intervention on the Place des Terreaux in Lyon, France. There, Buren installed a grid of fountains, the steel bands defining the grid running in one direction to the base of columns, thus effectively linking the horizontal to the vertical.

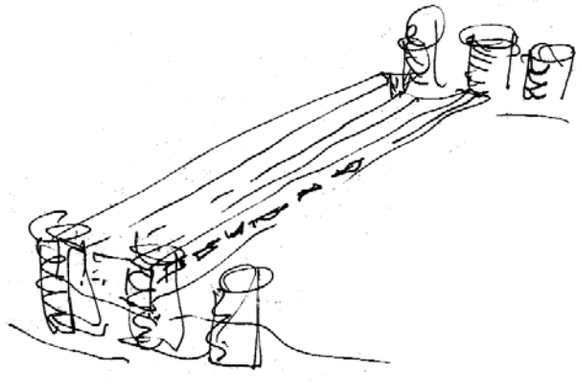
> *The landscape contains layers of complexity…: changing patterns of light and shade, for example, or growing plants. If the sculpture that inspires the landscape designer can be compared to a melody, the built landscape that results "is not a simple tune any longer, it's a multi-layered symphony."*
> Peter Walker (Thompson 1991, 65)

How thick is landscape? The lonely baobab tree interrupting the solitude of a flat African plain hints at what's below as it reaches to what's above. In Walter De Maria's Lightning Field, the tips of its gridded steel rods create a new manmade horizontal plane as it explores its dimensions with the looming storm clouds. The landscape has become at least 400 feet thicker. De Maria's New York City Earth Room, its massive load of soil piled atop a Soho gallery floor, helped us explore our relationship with the earth at a higher elevation than that from whence it came. What are its dimensions? And we all know 9-11 immediately bestowed a sacredness to the landscape that lay below the World Trade Center that did not exist before. Did it alter the thickness of that landscape? The ground below has layers, however injured they are. Does the memory of the most vertical structures that were in the city suggest new verticality beneath Ground Zero?

5.9 Study of the grid: Hotel Kempinski



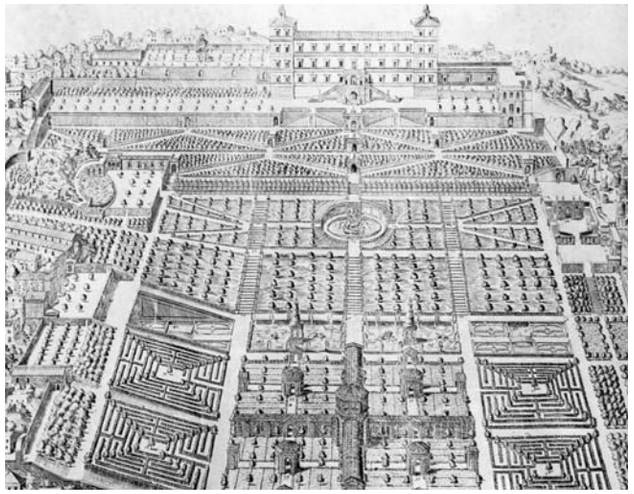
5.10 Site grid patterns



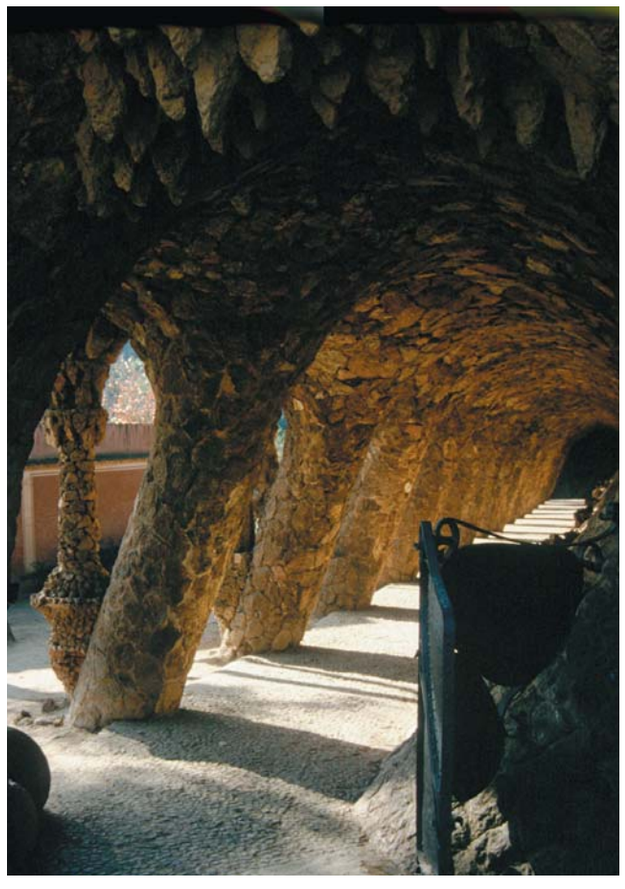
We need not be so concerned about perfect conformity to past form but ought rather to seek to use remains to enhance the complexity and significance of the present scene…We prefer a world that can be modified progressively, against a background of valued remains, a world in which one can leave a personal mark alongside the marks of history.
Kevin Lynch (Lynch 1972)

The architect is a man who synthesizes, but does not yet possess the wisdom and infinite intuition of the angels, who alone are capable of building a cathedral without planning ahead. To resolve spatial problems, he must work constantly, as if he had to climb the highest mountain…
Antoni Gaudi (Martinelli 1969)

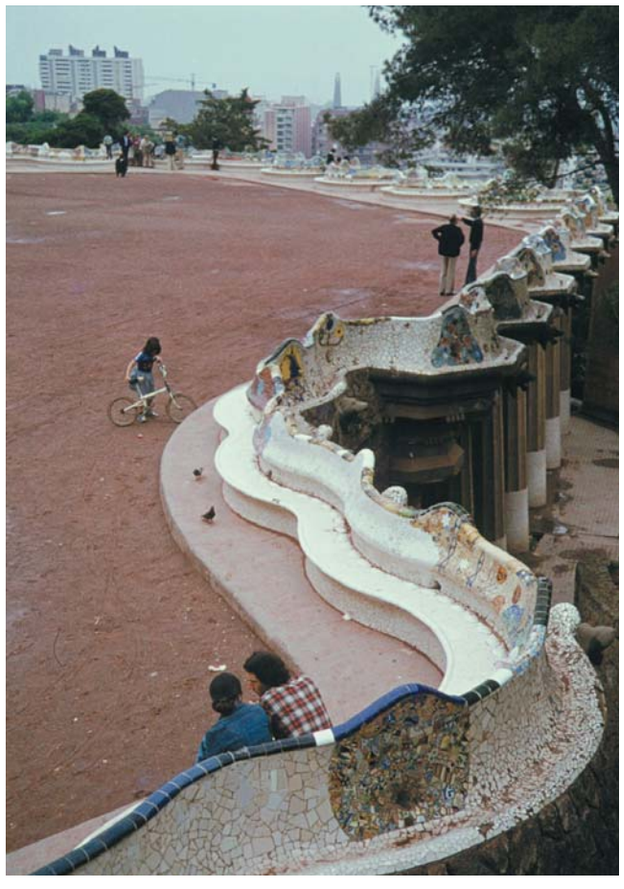
6.3 Viaduc des Arts and Promenade Plantee



6.4 Villa d'Este at Tivoli



6.1 Parque Guell



6.2 Parque Guell

6.5 Park Andre Citroen

6.6 Landschaftspark Duisburg-Nord

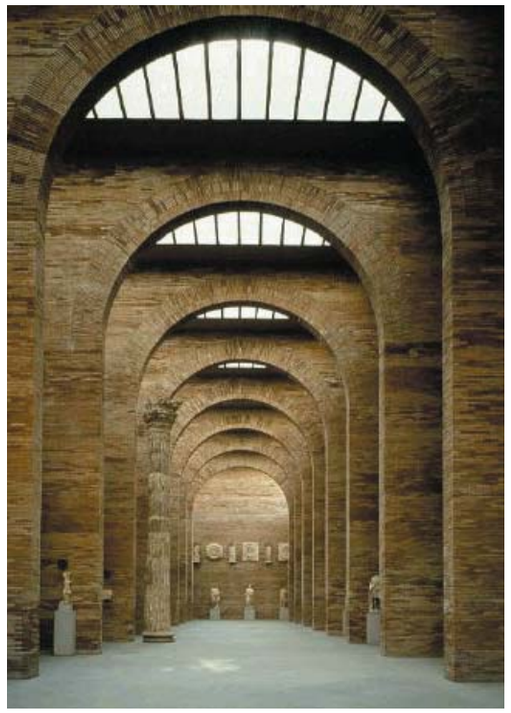
The author looked at some of the many mountains, of varying heights, which have been climbed in the past by designers of parks and other public spaces as he continued to explore landscape and move toward the rebirth of the McMillan site. A few examples:

An important part of the McMillan site's story relates to water, the circulation of water. A historical look back at such landscapes as the **Villa d'Este at Tivoli** with its spectacular water works. Fig. 6.4

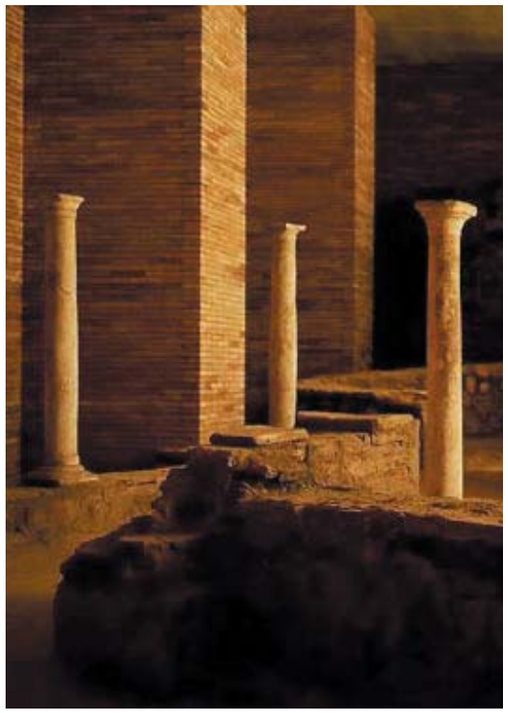
Parc Andre Citroen, Paris, with its marriage of classical French geometry and planned wildness, the boldness of its hardscape, its vast central lawn, the different experiences the variety of its spaces offers, "the fragmentation (created by the planting design in some of its gardens) that is a necessary antidote to the monolithic geometry of the park." (Tate 2001). Fig. 6.5

Parc Guell, Barcelona, Antoni Gaudi's marvelous if unfinished residential garden city project with its Doric-inspired columns and rain water collection system, demonstrating the masterful command of colors, materials and textures by Cataluna's most famous architect. Fig. 6.1, 6.2

Landscape Park Duisburg-Nord, Peter Latz' widely acclaimed project that brought the science of adaptive reuse of industrial ruins to a new height, utilizing "the existing fragments of industry as layers that are recombined through the lens of park design." (Krinke 2001). Fig. 6.6



6.7 Museum of Roman Art



6.8 Museum of Roman Art

6.9 Thames Barrier Park

6.10 Thames Barrier Park

The Viaduc des Arts, Paris, the transformation of an abandoned 19th-century elevated rail track into some 2-1/2 miles of park-pedestrian walkway above, 50 artisan ateliers below in its renovated arches, creating vibrant dialogue between the old and new while revitalizing a large urban area. Fig. 6.3

Thames Barrier Park, London, a reclaimed brownfield where bold design interventions (with hints of Paris' Parc Citroen) provide three-dimensionality to a some 20 acre flat ground plane that raised issues not unlike those of the McMillan site. Fig. 6.9, 6.10

The National Museum of Roman Art, Merida, Spain, Jose Rafael Moneo's remarkably designed museum built atop Roman ruins, using ancient Roman building techniques to reveal the town's rich heritage in a very contemporary setting. Fig. 6.7, 6.8

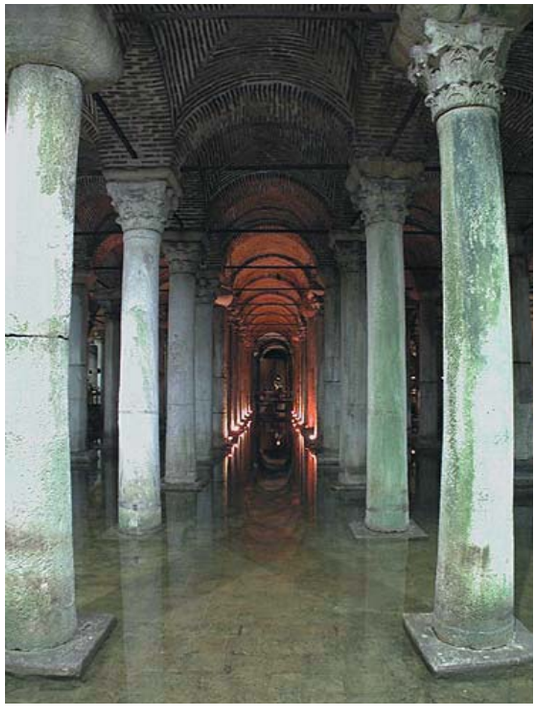
The Yerebatan Cistern, Istanbul's largest underground cistern, built during Byzantine times and restored in the 1980s by emptying the water to one meter depth and installing walkways. Fig. 6.13

Transformed from a forbidding "needle park" into one of the most successful public multiple-use open spaces in urban America, **Bryant Park, New York,** is a tribute to the principles of the late urbanist William H. Whyte and design skills of landscape architect Laurie Olin. Fig. 6.11

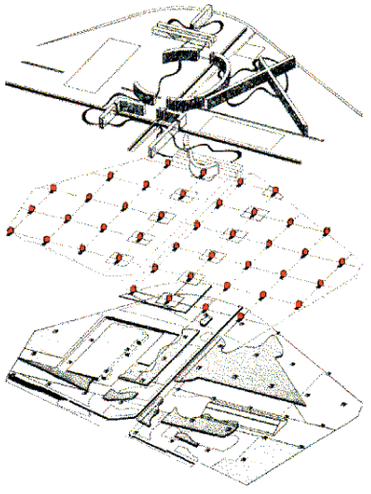
The Bibliotheque Nationale de France, Paris, its powerful horizontal layers and strong built and living vertical design language. Fig. 6.12

Parc de la Villette, Paris, with three systems (points: a grid of follies; lines: lines of pedestrian movement; and surfaces: flat programmed open-air areas) superimposed by Bernard Tschumi. Fig. 6.14

Donald Judd's inspiring installation of **untitled works in concrete** on a horizontal plane, **Marfa, Texas.** Fig. 6.15, 6.16

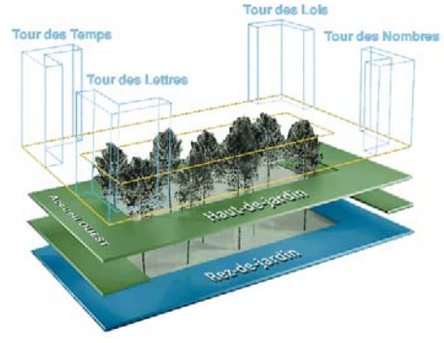


6.13 Yerebatan Cistern



6.14 Parc de la Villette

6.11 Bryant Park



6.12 Bibliotheque Nationale de France

6.15 Donald Judd's 15 untitled works in concrete

6.16 Donald Judd's 15 untitled works in concrete

Chapter 7 Water in the landscape, sustainability...

Ordinary citizens are only likely to take responsibility for water, and higher charges for developing a sustainable water culture will only be accepted, if people are aware of the value of water.
Detlev Ipsen (Dreiseitl, Grau and Ludwig 2001, 125)

Water is neither inexhaustible nor invulnerable. But the intensity with which it is used today tends to ignore these facts, as we increasingly exploit and pollute this gift of nature that is so essential for life.
Wolfgang F. Geiger (Dreiseitl, Grau and Ludwig, 72)

The characteristics of urban water dynamics, pollution, and use are well understood, their causes and effects well known, but that knowledge is too seldom applied.
Anne Whiston Spirn (1984, 130)

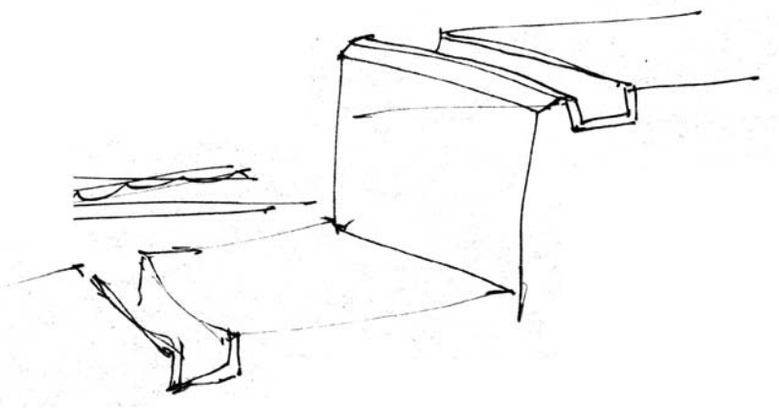
Of all our planet's resources, water is its most essential. How we have used and abused it, and what future practices we adopt in our built environments, will continue to affect how we as communities relate to the landscape around us. Water has been a, and for the past century the, central player in the drama of the McMillan site. A strong sidebar to this thesis must thus be a look at how water should be dealt with in the overall site redesign.

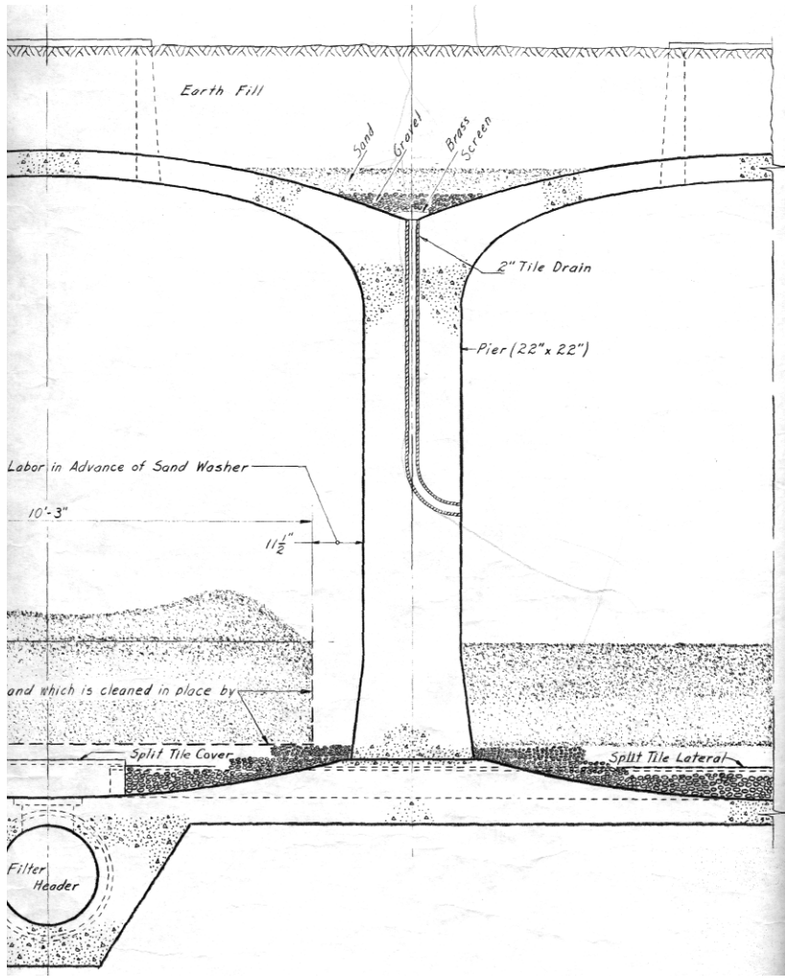
As the thickness of landscape was explored during this journey, similar questions about the dimensions of water came to mind: an element that feels equally comfortable moving horizontally or vertically, an element that will always descend vertically if it can and we allow it, yet whose surface will always revert to the horizontal when freed of any constraints.

Flashback: the mid-19th century and the residents of a rapidly expanding national capital received their water from a complex of springs, wells and cisterns. The largest of these was the Smith Spring that, even with the construction of McMillan Reservoir at its location, supplied the Capitol with drinking water until shortly before the sand filtration plant's operation. Likewise, a since-destroyed tributary of a stream flowed across the southeastern corner of the site.

The McMillan sand filtration plant was the result of a growing population and a water supply that was muddy, polluted, inadequate, and susceptible to water-borne diseases. A remarkable engineering achievement, the McMillan plant provided clean, safe water to much of the capital for near a century. The plant was a huge machine that internally circulated an enormous quantity of water. And then technology caught up and, in 1985, the plant stopped operation with the opening of the new rapid sand filtration plant across First Street. The capital's drinking water was henceforth to be processed at the new plant. Potomac River water no longer flowed through the site's vast machine. But the machine was, and is, still there. So is its history.

7.1 Smith Spring House McMillan Reservoir

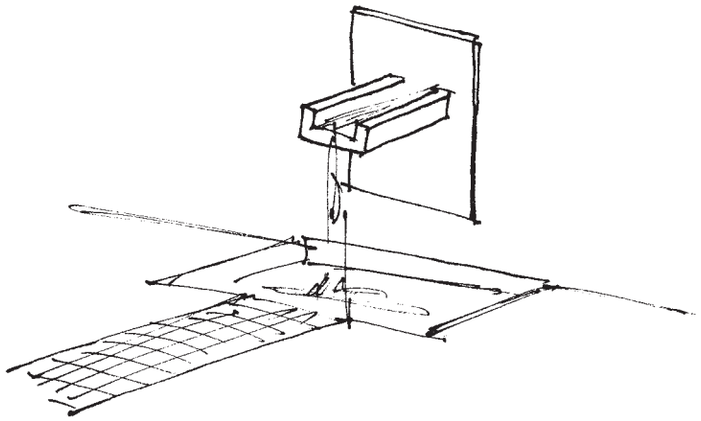




7.2 Filter cell detail: surface drainage

It was evident from the outset of this study that the site has considerable educational potential. For nearly a century, water moved throughout the thickness of the site's landscape in powerful ways. Not only would it be important to celebrate that history, to inform future visitors of its historic engineering and landscape significance, but also to educate those visitors as to responsible ways that we can and must manage water in the city today. The twenty-five acres of the site, and additional acres across First Street, were paved over to provide an essential service to the capital. Little development had occurred in the surrounding area at the time the sand filtration plant was built. As development increased and spread during the next century, however, so did the impervious surfacing of the American urban landscape with all its adverse consequences. Stormwater eroded our lands, carried surface pollutants into our streams, caused flooding, and reduced the recharge of our groundwater. The McMillan site was therefore viewed, not only as a future educational medium, but also as a valuable landscape of twenty-five acres where water would remain an important resource to be managed and enjoyed.

When in operation, the sand filtration plant's filter cell structure provided for surface rainwater to drain into the filter cells below and, while not recharging the groundwater, it usually did get recycled for public consumption rather than end up in a sewer pipe. Now, for that portion of the upper filter fields that has been retained between the two service courts, surface water would drain into cistern containers in the two preserved filter cells for reuse on site (e.g., toilets, irrigation). Surface water on the southern filter field would drain toward the north-south promenade and be collected in cisterns for reuse or move via runnels through the South Garden and into the planted swale.



Best Management Practices (BMPs) and Low Impact Development (LID) are two terms for measures designed to control, store and/or treat stormwater runoff from developed areas. The need to integrate sound BMP/LID practices into an overall redesign strategy for the McMillan site became obvious. In addition to the drainage structures described above, such practices would include the vegetated swales, eco-roofs, cisterns, permeable paving, native plant landscaping, rain gardens, and improved tree planting methods. Additional ways to address sustainability would be incorporated, with attention most certainly focused on recycling, specifically of concrete and glass. (For further information on stormwater management and BMP/LID practices, see Thompson and Sorvig 2000; Lehrer et al. 1999, Chapter 12).

What we've found is that you can have all the necessary ingredients for a good park and still not generate any users…the trick is to arrange all the parts of a park so that people can see all of them and use them and also have spots that give them a feeling of privacy. When you do this, all of a sudden a place feels more comfortable to be in, and that feeling acts like a magnet.
Fred Kent, Project for Public Spaces (Hiss 1990, 92)

Although most park users claim that "contact with nature" is their main motivation for going to a park, observation of what people actually do in parks suggests that social contact — both overt and covert — is equally important…All parks should offer the opportunity for both overt socializing, or getting together, and covert socializing, or watching the world go by.
Clare Cooper Marcus (Cooper Marcus and Francis 1998, 91)

More than ever, we need to incorporate in our built environment places for gathering and congregation, along with spaces for discovery, repose, and privacy in our increasingly bewildering, spiritually impoverished, overstuffed and undermaintained garden Earth.
Peter Walker (Levy and Walker, 20)

This is not a thesis about participatory design, although the author fervently believes in that process. That said, a brief look at what the community would like to see happen to McMillan site is useful. "The community" includes the City administration, the nearby university and hospital institutions, and the residents and their representatives from the surrounding neighborhoods. During four community workshops during the second half of 2000 and a follow-up meeting in January, plus separate round-table meetings with institutional representatives and with developers, all interested parties — current and potential stakeholders — exchanged views on the future of the site. At the risk of oversimplifying, neighborhood participants leaned heavily in favor of open space retention, inclusion of publicly accessible active and passive recreational

8.1 A hint of the future

space, and some modest mixed-use redevelopment. There was little support for residential development although it was not totally ruled out. City officials, while open to the full range of options, were understandably concerned with the high costs of any Site redesign and how any final option would be funded.

A *Summary of Recommendations for Site Revitalization* (DC Office of Planning 2002) provides a comprehensive list of goals that emerged from the 2000-2001 community workshops. The list of goals partially includes:

> Provide open space: develop publicly accessible, active and passive recreational space and imaginatively developed open space with significant existing views into the Site preserved.
>
> Preserve and adaptively reuse the site features: restore key above ground elements of the Site in a way that is compatible with the original plan; use stable cells as a historic record; revitalize the Site through adaptive reuse with a mix of uses; attempt to incorporate references to removed cell structure elements; ensure that proposed development is sensitive and responds to the Site's cultural significance, and understand the historic landscape so that it can be accurately interpreted, preserved and/or recreated.
>
> Be creative: think 'outside the box' to make elements of the revitalized Site more of an amenity — a 'jewel' — to residents and others; seek new, historically sensitive and creative ways to occupy key elements of the Site and consider incorporating an appropriate monument, memorial and/or museum into the Site.
>
> Mitigate neighborhood impacts: reduce the impacts and/or visibility of parking, traffic and noise; coordinate area-wide planning and development; integrate new development on the Site architecturally and structurally with the historic structure; and improve transportation options for the neighborhood
>
> Make it feasible: maximize, to the extent possible, revenue-producing opportunities on both private and non-private components of Site development; partner with private, not-for-profit and other public sector investors; and develop a mix of preferred uses that might include open space, housing, and neighborhood serving retail.
>
> Be responsive to community needs and concerns: develop amenities or a site program that would be attractive to and accessible by a diverse population of residents and others.

(The complete list of goals and other information may be found on the DC Office of Planning's web site, http://planning.dc.gov/project/mcmillan_reservoir/)

As the author set out to redesign the site, focus remained on the site landscape and how that landscape's geometry could best guide design interventions in order to create a McMillan memorial park that the French under President Francois Mitterand would have called *un Grand Projet;* "a jewel" per the published Site goals; a site justifying its inclusion as a priority in the capital's *Memorials and Museums Master Plan.* Stakeholders desires as expressed in the public process were kept in mind, however, in hopes that the result would be a space serving not only its residential and institutional neighbors but also residents of and visitors to the larger capital region.

The following basic goals for the design process were set:

- A site that would celebrate its history.
- A site that would meet the wide range of contemporary interests and needs of its users.
- A site that would help visitors understand better the landscape and their responsibilities to it.