MANAGING HISTORIC MOUNTAIN LANDSCAPES NEAR A MODERN CITY:  
THE CASE OF THE BEIJING WESTERN HILLS, 1912-2012

BY

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DISSEPTION

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Abstract

During the period of 1912-2012, the Beijing Western Hills is of profound importance because at this scenic site occurred the first synthesis of the major landscape management instruments that now form Chinese public policy. From this synthesis emerged the Chinese city's modern relationship to its adjacent hillside areas in particular and China's new relationship with the natural world in general, both of which evolved over a time period of both global and national changes in technology and political philosophy. Relying on textual analysis and extensive fieldwork, the dissertation characterizes five dimensions of landscape management problems at the Western Hills in relation to the modern development of urban Beijing. These are 1) architectural and landscape design; 2) city planning; 3) hydraulic engineering; 4) forestry; and 5) cultural heritage management. These disciplinary efforts emerged as procedures and methods for solving common problems posed by the new relationship between the city and its adjacent rugged terrains, reshaping the physical landscape and leading to the institutionalization of landscape management and the professionalization of a new class of experts as seen today. While the disciplinary solutions did solve many old problems, some of them have caused new ones. The study also reveals that the Beijing Western Hills is not just a singular case, but rather it is where Chinese official ideas about landscape planning, design, and management were developed, and thus it is a crucible for evolving interpretations of the Chinese landscape and methods for managing it. All these are analyzed within a theoretical framework of modernity in order to identify potential policy and design approaches for the present.
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I employ the Hanyu Pinyin romanization system for Chinese words and names, which was introduced by the Chinese in the 1950s and largely supplanted the older Wade-Giles system and the place-name spellings of the *Postal Atlas of China* (last updated in the 1930s). Names are usually spelled without hyphens and tone marks, and an apostrophe is only used to avoid ambiguity when syllables run together.

However, for certain place names and personal names long familiar in their older forms, old spellings are retained. The names Sun Yat-sen and Chiang Kai-shek are such examples. Names not listed in older forms in the latest edition of Merriam-Webster's Collegiate Dictionary are presented in Pinyin. Certain old-spelling names in endnotes and the bibliography are presented that way.
1. Introduction: The City and Its Adjacent Mountains

The following study is a historical analysis of landscape planning and design based on a case study of the Beijing Western Hills (北京西山) during the post-monarchy period. The primary reason why this topographical area has played a more important role than many other sites is because it is proximate to Beijing, one of the major metropolises of the world. Beginning in the 1910s, progressive governments, social activists, experts trained in Western ways, and local people joined together to reshape this landscape under new conditions. By addressing issues concerning the constraints and opportunities of the rugged terrain, they created new paradigms of landscape management that mediated the relationship between city and country, between past and present, and essentially between the Chinese and their physical environment. The accumulation of these disparate efforts has led to the professionalization of a new class of experts and the related institutionalization of landscape management as seen today, which signaled the advent of the modern state. In many respects, the changes in this relatively small area should be considered a critical part of the larger transformation that occurred throughout China and the world in general during the same period. The thematic chapters that follow trace this century-long process in which the Beijing Western Hills was reinvented to be a landscape of tourism, recreation, preservation, and conservation.

The name “Western Hills” has historically been used in a scalable manner without a clearly designated scope, referring to the part of the Taihang Mountains (太行山) west of downtown Beijing in general. In this dissertation, the name specifically refers to the group of foothills and low mountains separated from the rest of the Taihang Mountains.
by the Yongding River (永定河) and the north-south gorge (军庄沟) between the Zhaikou (寨口) Village and the Sanjiadian (三家店) Village (Figure 1.1). Thus defined, the Beijing Western Hills is a transition zone between the Taihang Mountains and the North China Plain, which includes an 8400-hectare mountain range and a group of small foothills that range in elevation from 30 meters (100 feet) to 700 meters (2600 feet) above its adjacent flatlands (Figure 1.2). With its nearest point to the Forbidden City at a distance of only twelve miles, this zone is the most accessible mountainous area for Beijing’s urban residents. The Beijing Western Hills represents a special type of landscape shaped by city and mountain together. As an extension of the Taihang Mountain, this area typifies the constraints and opportunities of rugged land: on the one hand, it is unsuitable for crop planting and mass construction due to the unstable ground, shallow soil, and steep slope; on the other hand, it boasted abundant natural springs and magnificent scenery, offering a sense of being close to nature. In many respects, the Western Hills resemble many hills and mountains in terms of land use and resource management, being subject to more efforts of conservation and recreational development than the surrounding flatlands. Meanwhile, because of the proximity to urban Beijing, the Western Hills embodies the features widely seen in suburban areas where a changing urban culture casts new meanings and values upon lands. As in many other world cities, the urban elites of pre-modern Beijing left an abundance of villa gardens, hunting grounds, and religious establishments on the nearby hillsides. The new public authorities then took over these properties as cultural resources for the development of the modern urban economy, and they also made investment in new amenities in adjacent hillsides for public recreation and education. Without the power and capital of the city, such
developments could not be so many in number nor as magnificent in scale. As a result, contemporary visitors to the Western Hills will find a patchwork of Buddhist temples, palace gardens, a botanical garden, a national forest, hotels, residential developments, and hydraulic facilities.

Figure 1.1 Relief map of the Beijing Western Hills in relation to urban Beijing and the Taihang Mountains, with the roads and waterways as seen in 2012 (by author)
Figure 1. 3D model showing the mountain range and hills of the Beijing Western Hills (by author)

Although tradition played a great role in the shaping of the lands, this research focuses on the period of time since 1912 because the landscape of the Beijing Western Hills today is largely the product of the modern changes, including even those seemingly ancient features that were modified or reconstructed recently. These changes are part of the transformation of the global landscapes during the past several centuries that produced many of the environmental problems we face today, such as destruction of
historic structures, large-scale exploitation of natural resources, and mass urbanization. Meanwhile, during this period many of the environmental management instruments that now form public policy were adopted: public land acquisition, historic preservation, forestation, hydraulic engineering, mass tourism—just to name a few. J.B. Jackson pointed out the significance of examining the recent past of landscape as early as 1980:

Landscape showing those characteristics (the unremitting efforts to establish communications; the lust for power and mobility; the search for sensory experiences of the world as the most reliable source of self-knowledge) are becoming numerous, and I think that is why we are increasingly fascinated by immense cities, industrialized regions, the desert, the wilderness, and with parts of the world awash with new and migrating populations. We seem to be living in the midst of a second and more massive *Völkerwanderung*, in a period when old landscapes disappear and new landscapes involving new relationships, new demands on the environment are slowly taking form. And as I see it, it is in those places where what we call landscape studies can be particularly rewarding.¹

For Jackson, the reason why studies of modern landscapes are rewarding is because the landscapes comprise the reality that we are "living in," and thus a better understanding of their formations facilitates both interpretive and instrumental purposes. In the case of the Beijing Western Hills, it is not enough to merely survey the fragments of the past; instead, it is the conjunctions of the old and the new that landscape historians have to focus on in order to fully understand how the landscape has evolved.

This kind of study treats landscape as an agent of change. Landscape is often invoked as a means of solving economic, social, political and ecological problems. However, labor and capital investments are required for those solutions, and that comes at a human and financial cost. Landscape planning and design is a problem-solving process that involves complicated negotiations among various stakeholders. It is my conviction that a city's relationship to its adjacent landscape should be best examined in
terms of utility—the most direct reason for people to spend time and money. We should ask: what is the utility of such landscape to its urban core? And how does this utility attract or legitimize capital investments in creating certain linkages between city and country? An assumption of this dissertation is that this utility-based notion of landscape is a key aspect of the relationship between the Western Hills and the city development of Beijing.

City-mountain Relationship as a Worldwide Problem

Isolating a mountain in the vicinity of a modern city, such as the Beijing Western Hills, as a type of landscape planning and design problem has broad implications. With a combination of altitude, local elevation range, and slope as the criteria, geographers have recently identified six classes of mountain area of the world on the basis of the global digital elevation model GTOPO30 completed by the US Geological Survey in 1996. Thus defined, the global total area of mountains accounts for 24% of global land surface, of which 8.8% includes the lowest elevation class between 300 and 1000 meters in altitude (the Beijing Western Hills belongs to this class). Making no distinction between mountain and hill, this classification does not include lower reliefs under 300 meters altitude and those with local elevation ranges (elevation range within a radius of 5 km) under 300 meters that may be “mountain” to local people, such as a small promontory on a plain.2 While it is difficult to select a specific threshold of altitude for defining mountains because altitude is also relative to the base elevation of the city itself, it is clear enough that rugged terrains are important in establishing the fundamental structure of the earth and setting up the stage upon which human activities take place (Figure 1.3).
In the year 2000 twelve percent of the total population of the earth was living in mountains above 300 meters in altitude, with more than half of them below 1000 meters altitude and thirty percent urban. A further fourteen percent live in hills and plains adjacent to such areas. Therefore, mountains are important for not only rural and remote communities but also urban centers within and close to them, and mountain development at lower elevations poses a more widespread problem.


The relationship of human settlements with mountains changes with time. Ancient
people established villages, towns and cities within or close to mountainous areas, such as the Acropolis of Athens and Machu Pichu of the Inca civilization, because such sites could be easily defended in wars, and also because there was no need at that time to accommodate big industries, large-scale transportation, and exponential growth of population. But the widespread use of gunpowder diminished the importance of terrain for defense, and the advent of the industrial revolution and ocean shipping made coastal flatlands and inland alluvial plains adjacent to rivers preferable for the development of major urban centers. Nonetheless, this shift did not mean that city and mountain were separated; on the contrary, the concentration of production and population has increasingly caused flatland shortage. As a result, not only did some preindustrial hillside cities of continuing political or socio-economic importance spread into surrounding gently sloping areas for further development, but also many metropolises on plain areas rely on rugged lands at urban fringe for building suburban estates and protecting farmlands. Along with these changes in urban geographic patterns comes a romantic appreciation of mountains different from the previous fear, suspicion and awe. Foothills and low mountainous areas had been sacred pilgrimage sites since ancient times (e.g. Delphi in Greece) and elitist retreats since the Renaissance (e.g. the Medici villas outside Florence), but it was not until the industrial urbanization that high mountains became popular tourist destinations among the general public (e.g. the British Alpine Club in 1857 and the Sierra Club in 1892). Mountains are now refuges for mass urban residents who wish to commune with nature and escape the changes and crowds in modern cities (e.g. the proliferation of mountainous national parks), and they also serve as themes in art, literature, and music (e.g. the Hudson River). As the world’s population becomes
increasingly urban, more and more people around the world are going to be influenced by this new and changing relationship between city and mountain.

Because of its enduring and increasing importance in our times, the city-mountain relationship has been touched upon directly or indirectly in many scholarly works in English. It is not surprising that a large portion of this body of literature, often under the title of “hillside development,” has emerged in the post-World War II West where the contradiction between soaring housing demands and urban land shortage is manifested in downtown skyscrapers and suburban sprawls. Architectural scholars have compiled a number of design guides for how to build housing on sloping sites, which often include investigations of historical precedents and contemporary practices. These investigations reveal that the reason why hills that were deemed unsuitable and costly for construction became popular housing sites in the postwar West, especially California, is because hillside land is cheaper and modern techniques can make unstable grounds safe and attractive. Similar guides in the field of landscape architecture also addressed hillside design, with a focus on outdoor spaces. Designing for Mountain Communities, written by Sherry Dorward, is perhaps the most comprehensive book in this regard that discusses the combination of community design and mountain ecology based on the design practices in the Rocky Mountains. Moreover, some planners have surveyed the history of hillside development regulation. For example, Robert Olshansky’s study of such history in the U.S. shows the diverse concerns in the making of a plan and regulation for hillside development, ranging from housing needs and safety to natural protection and aesthetic quality. He also points out that such regulation did not emerge in U.S. until the postwar mass construction. Although mostly normative and practice-oriented, these works
contain important information about the changing relationship of modern urban development with surrounding rugged lands, especially those at lower elevations.

If the above studies are concerned with how human settlements have been and should be created on rugged areas, two other groups of scholarly works are devoted to the landscapes themselves. One group focuses on the scenic preservation of mountains. Linda Flint chronicles how the National Park Service fulfilled its dual mission to conserve natural scenery and to provide for public recreation through a combination of naturalistic gardening, native materials, and craftsmanship, mostly during the New Deal era.11 Ethan Carr supplements Flint with a detailed review of Mission 66—a ten-year program that aimed to upgrade and expand national park services from 1956 to 1966—that still adheres to the principles of scenic preservation except for the use of modern structural forms and materials.12 Because these national parks, especially the earlier and most well known ones, are mostly located in mountains and serve urban tourists, their development constitutes a critical dimension of the modern relationship between the urban culture and rugged lands in North America. In particular, some national parks are in the vicinity of major cities and thus closely related to urban development, such as Yosemite in which Hetch Hetchy Valley was dammed in 1923 to deliver water to San Francisco.13

However, with the rise of the environmental movement in the late-20th century, this scenic preservation has been increasingly questioned.14 The other group of scholarly works, usually under the title of “sustainable mountain development,” emerged to develop more integrated and interdisciplinary approaches toward mountain management that cross natural sciences and social sciences. A major force for this development is
UNESCO’s Man and Biosphere (MAB) Programme, which included *The impact of human activities on mountain ecosystems* as the sixth of its fourteen projects in 1973. Gathering under this project, natural and social scientists from around the world began to investigate various mountain ecosystems in relation to human use so as to replace old systems that are no longer socially relevant and economically viable with new ones that balance human system and natural system in tropic mountains, temperate mountains, and tundra. They have produced reports in the forms of both wide-ranging thematic discussions and case studies from the Alps in Europe, the Rockies in North America, and the Usambara Mountains in East Africa.\(^{15}\) Most of the mountain research focuses primarily on high mountains and is biased toward agricultural landscapes and wilderness areas, paying little attention to lower reliefs that are more directly related to the development of major urban centers. But they still contribute to the historical understanding of the city-mountain relationship because human activities on high mountains have great impacts on downstream water supply, river regulation, soil erosion, and sedimentation.

Also due to the rise of the environmental consciousness, a special group of studies that can be loosely categorized as “environmental history” has emerged to examine the changing relationship between city and mountain in history. With only a few exceptions, such as Michael Frome’s 1966 book on the Great Smoky Mountains, most of them have been written since the 1990s.\(^{16}\) For example, David Stradling’s work examines the myriad interconnections that bound New York City and the Catskill Mountain together, following the motif of city-and-country pioneered by Raymond Williams and William Cronon. Stradling traces how urban tourists with the modern environmental
consciousness made their way into the mountain to reshape the previous landscape of agriculture and natural resource extraction, and how simultaneously New York’s ever-growing demand for water led to the construction of reservoirs and pipelines to keep mountain water flowing toward Manhattan Island. Ronald Lewis directs our attention south to West Virginia’s Appalachia, looking at how the capitalist development of the eastern population centers denuded the virgin forest of that area with the aid of railways and steam-powered sawmills during the period of 1880-1920. Gregg extends this story to the 1930s during which the progressive federal government prohibited the timber industry and other exploitative activities in the Appalachian Mountains, and then turned much of the terrain into national forests and recreation areas. Despite the differences, all these stories can be seen as the regional variations of the modern urban culture’s influence on the America mountainous areas. They are supplemented by Jack Williams’s survey of forty-five small towns throughout the area of Appalachia, which criticizes automobile and consumer-driven landscape of our times in favor of compact and site-sensitive urban form. The reason why Appalachia serves as the most-examined area may be because it had long been exploited and inhabited before the rise of conservation and preservation. Thus the later efforts to create national forests or parks there often involved more conflicts and controversies. This history of the Appalachia differs greatly from that of the Rocky Mountains in which wildness untainted by human activities was the central theme.

Overall, the history of foothills and mountainous areas in the vicinity of modern cities are scattered in the four groups of studies: hillside development, scenic preservation, sustainable mountain development, and environmental history. Deriving from different
disciplinary or institutional backgrounds, each body of research touches upon limited
dimensions of the subject: urban planners, architects, and landscape designers are in
search of the normative and universal at a site scale but pay little attention to the larger
historic and regional mechanisms; geographers and historians are interested in such
mechanisms but tend to ignore individual sites; the history of the U.S. national parks has
been confined within the institutional development of the National Park Service without
much mention of other contemporary movements; and sustainable mountain development
is the domain of natural and social scientists who have little interest in history. Such
disparate conditions of knowledge are not surprising because mountains differ in location,
elevation, and element, and because they have influenced human inhabitation on the earth
in so many ways. No single disciplinary framework can cover the whole spectrum of
mountains' relevance to human society.

Such relevance in China is particularly obvious and important. Fifty-two percent
of the country’s total land area is mountainous above 300 meters altitude and with local
elevation range above 300 meters. If counting those under 300 meters altitude or with
local elevation range less than 300 meters, then two thirds of the total land area is rugged,
while the flatlands only account for 10%. This makes China the largest among those
countries on all continents whose mountain areas exceed fifty percent of their total
national land mass. As most cities are located adjacent to or directly on hilly lands, a
major issue to consider in regards to Chinese landscapes is the relationship between cities
and mountains (Figure 1.4). This relationship becomes even more evident today due to
the accelerated pace of urbanization in contemporary China, causing increasingly
intimate linkages between city and country. With less flatland available across the
country, hilly lands—especially those at lower elevations—become critical opportunities for accommodating urban growth. But they are often reserved in the public domain as green spaces or repositories of historic fabric, serving as the arenas for experiments in modern heritage resource—both natural and cultural—management. Thus arise intensive conflicts between development and protection.

The research on the changing Chinese city-mountain relationship is still nascent, but there has been a great upsurge in interest concerning China’s mountains since the 1980s. Pioneering this trend are geographers, particularly those from the Institute of Mountain Hazards and Environment at Chengdu (成都山地灾害与环境研究所). While these Chinese geographers have been mainly concerned with natural features and processes of mountains, some begin to pay attention to human dimensions of that type of landscapes recently. Meanwhile, urban planners, such as Huang Guangyu (黄光宇, 1936-2006) at Chongqing University, have compiled some general guidelines for hillside development with respect to urban planning. Different from the former qualitative and normative studies, the geographer Xie Ninggao (谢凝高) and the architectural historian Zhou Weiquan (周维权, 1927-2007) have attempted to chart how Chinese mountains were shaped historically by the emperors’ sacrifice rituals, Buddhism and Taoism, and landscape arts such as poems, painting, and gardening. With an over-emphasis on mountains of scenic quality and historic association, both Xie and Zhou’s studies are dedicated to the preservation of premoden features and talk little about the transformative effects of modernization on Chinese mountains. But the proliferation of such scholarly research testifies to an increasing interest in mountain issues in contemporary China.
Figure 1. 4 Mountains, cities, and National Scenic & Historic Areas in contemporary China, not including that of Taiwan, Hongkong, and Macow (by author, up to October 31, 2012). Source 1: UNEP-WCMC-Global, Mountains of the World—2000 (ArcGIS online, 2011). Source 2: MappingOurWorld, World Cities with population greater than 100000 (ArcGIS online, 2012).
Much of this interest has been stimulated by the institutionalization of the “national park of China,” in which “Mountains” comprise one of the fourteen categories of scenic areas, and several other categories also include mountainous sites.28 From 1982 to 2012, 225 areas all over the country have been inscribed at a national level and 737 others at the provincial level, all of which account for 2.02% of the total national land area. Together they encompass 401 “National Cultural Heritage Units” and 196 “National Intangible Cultural Heritages” within their confines. Thirty-two national parks are further inscribed as UNESCO World Heritage sites.29 About half of these protected areas are situated in the transitional zones between populated coastal or riverside plains and remote highlands, thus featuring foothills or low mountain landscapes. The regional distribution pattern of these rugged sites highly coincides with the national demographic and economic geography, and it is in the most urbanized eastern part of China (below 1000 meters altitude) that the mountainous national parks are concentrated.30 This coincidence clearly suggests the important relationship between urban development and scenic/historic mountainous areas in contemporary China. Unfortunately, the scholarly works on these sites are mostly instrumental and normative, or at best offer only cursory reviews of the institutional history since the 1980s.31 Few studies exist to show how these sites have been transformed since the end of the Chinese monarchy.

To sum up, the city-mountain relationship is an enduring problem of worldwide importance, but little information about foothills and mountainous areas near major urban centers has been assembled in one place. In particular, the variations in city-mountain relationships remain unexamined in modern China. I have chosen the Beijing Western
Hills as a mirror of the problem for a variety of reasons. Beijing has been China’s national political center since the thirteenth century, and it is still one of the most important metropolises in the contemporary world inhabited by 21.15 million people at the end of the year 2013. With a continuous development spanning so long a time during which the transition from tradition to modernity has occurred globally, Beijing’s urban growth into the surrounding historic and natural landscape at various moments covers a wide spectrum of issues that also exist elsewhere in the world. The Western Hills west of downtown Beijing is particularly informative in revealing these issues because, as a transitional zone between plain and mountain, its landscape management involves a mixture of strategies as applied to low-lying lands and high mountains as well as urban and rural. Moreover, the Western Hills is large enough to encompass a wide variety of natural and cultural features, but at the same time it is topographically definable and suitable for close analysis. The Beijing Western Hills offers an opportunity for achieving a balance between breadth and depth in the study of the city-mountain relationship, allowing close contextual analysis of a single area without missing the larger picture. Therefore, instead of an examination of a series of sites of this type, this dissertation is a deep history of a metropolis’s complex relationship with one relatively small area, reconstructing the linkages that historically bound the city and its immediate surroundings together.

Although the Beijing Western Hills is the immediate focus, the study's broader ambition is to explore the ways that cities in general have evolved in relation to their nearby mountainous landscapes in the process of modernization. The case of the Beijing Western Hills may thus serve as a starting point for the future examination of other major
urban centers in China, such as Nanjing, Guangzhou, Chongqing, Qingdao, and Wuhan, all of which are bordered by mountainous landscape of scenic and historic interest. The accumulation of these case studies paves the way for the comparative studies between China and the rest of the world. In this sense, this study has implications far beyond local significance, and its framework and findings can be transferable or comparable to other similar areas.

**The State of Research on Beijing Western Hills**

In spite of its natural and cultural significance, the Beijing Western Hills as a whole has not received in-depth historical analysis, and its various dimensions have rarely been studied together. While studies by architectural and garden historians, historical geographers, and folklorists touch upon some aspects of the site, no previous work has attempted to explore the full spectrum of the subject—in either spatial or temporal terms—and merge piecemeal findings into a coherent narrative. The following section offers a critical review of the existing disparate literature on the subject.

**Palace gardens, private gardens, and Buddhist temples**

One aspect of the Western Hills that has attracted wide attention is the phenomenon of garden making. The suburban land that stretches from downtown Beijing to the eastern edge of the Western Hills is one of the two areas in today’s China where the most exquisite extant classical gardens are concentrated. (The other is in Suzhou, in the south.) While these garden sites have appeared in the descriptions of travelers and local chroniclers since the seventeenth century, truly rigorous studies based on analysis of the sources and analytical interpretation were not seen before the 1920s.
The earlier efforts focused almost exclusively on Yuanmingyuan (also known as the Old Summer Palace), with the 1928 book of Chen Yansheng (程演生, 1888-1955) and the 1933 article of Liu Dunzhen (刘敦桢, 1897-1968) as the most representative and authoritative. Chen’s work was basically a collection of the relevant textual materials and a set of silk scrolls drawn in 1744 by the royal painters to record the completion of the garden. Liu supplemented the former with the royal archives and a body of design drawings produced in the 1870s by the artisans who were then employed by the royal court to restore the site destroyed by the allied English and French forces in 1860. At the same time, similar surveys were conducted for those relatively humble private sites surrounding the imperial gardens, such as the Shaoyuan Garden located south of the Yuanmingyuan Imperial Garden. Generally speaking, the primary research focus of these studies was architecture; when outdoor space received attention, it was merely because of its close relationship with the former. As a result, the discussions rarely went beyond the garden’s enclosure walls, leaving the role of the gardens in the regional relationship between the city and the Western Hills unexamined.

The pioneering reports on the garden remains at the Western Hills appeared sporadically in the 1920s and 1930s, but almost entirely disappeared during the period of 1937-1949 due to the World War II (1937-1945) and the Civil War (1945-1949). After the founding of the People’s Republic of China in 1949, scholarly research was resumed, and it continues until today with a short interruption during the Cultural Revolution (1966-1976). During this recent period of time, one of the most serious scholars dedicated to the historical study of the classical gardens at the Western Hills was Zhou Weiquan (周维权, 1927-2007). Since the 1960s, Zhou shifted from his earlier interest
architecture to garden history, publishing a milestone article in 1969 entitled “Old Gardens to the North-west Suburbs of Beijing (Peking).” That article was the first to place all the classical gardens at the Western Hills within their regional context and discuss them as an interconnected whole. More specifically, the article began with an analysis of the natural conditions like topography and water, and then turned to chronicle the emergence and development of garden making in this region from ancient times to 1912. With this spatial and temporal background, Zhou reconstructed the master plans for eight major gardens for the first time based upon solid textual research, and these are followed by six suggestions for the contemporary management of the historic gardens.37 From then on, Zhou continued to investigate these sites and added more and more details to his original research. Ultimately, the accumulative findings were presented in integrated form in his 1990 book on the history of Chinese classical gardens, which is still the most authoritative study on the Chinese royal palace gardens until today due to its solid textual research and generous plan drawings.38

The importance of this book to my study of the city-mountain relationship is not confined to its comprehensive documentation of the royal palace gardens. Paying attention to ownership and function, the book also talked about two other categories of Chinese classical gardens: Buddhist temple gardens and private residential gardens. Under the former category, Zhou specifically traced the initial development of the Western Hills back to the seventh century when a first few Buddhist temples were built there, and he chronicled how this type of site increasingly proliferated from then on, especially during the Ming Dynasty (1368-1644).39 This pioneering finding revealed that, in addition to secular enjoyment, religion had historically provided an impetus for people
to make investments on the infrastructures of the Western Hills. Six years later, Zhou published another important book that specifically dealt with the historical development of the scenic mountains or hills in classical China, examining how the early efforts of Buddhists and Taoists to build necessary infrastructure on those uneven terrains paved the way for the emergence of mass tourism in later years. This work is representative of a new scholarly interest that emerged in post-Mao China, which looks at scenic hills and mountains across the country that feature both natural and historic resources. Additionally, Zhou is one of a group of like-minded scholars or professionals who have drawn inspiration from America’s national park system as well as UNESCO’s instruments for heritage landscape management. However, these people have by far focused on those remote areas over the suburban ones and the pre-1912 periods, assigning marginal status to the suburban ones like the Western Hills. Even Zhou himself discussed the Western Hills mainly in the 1990 book under the category of “classical garden.” This is perhaps because the suburban historic landscapes have usually been reshaped by the modern city development so dramatically that they could hardly be seen and preserved as single heritage areas. Therefore, despite the utility of Zhou's path-breaking work, it has little to say about the general question that this dissertation attempts to answer: the relationship between heritage landscape and city development.

Zhou’s 1990 book also included several studies of the classical private gardens across the country, but it did not specifically discuss those of Beijing in any detail. However, other scholars supplemented his work with much more exhaustive investigation of those comparatively humble sites. Among them, Wang Juyuan (汪菊渊, 1913-1996), who was a founder of the discipline of landscape architecture in China, and
Jia Jun (贾珺), who is now a professor in the Department of Architecture at Tsinghua University, made the most rigorous and detailed studies. Wang’s research on the classical private gardens in Beijing began in 1978 and continued until his death, and all the findings were compiled in his posthumous book published in 2006. In it, Wang devoted a whole section to the history of Beijing's private gardens. Three years after Wang's death, Jia Jun began his own focused investigation of the subject, finally publishing a complete monograph on Beijing’s private gardens in 2009. A big breakthrough of this book is that it went beyond the confine of classical garden making to include those sites that emerged or were transformed during the period between 1912 and 1949. This indicates that garden making is by no means a distinctive phenomenon of the past; rather, it actually continues to exist as an agency in the post-1912 transformation of the Western Hills. However, the primary intention of both Wang and Jia is to summarize the techniques for site design, and for that reason, their works made only passing references to the role of these gardens in the relationship between the Western Hills and downtown Beijing. That larger scale is what I wish to examine.

While most of the studies of garden making at Beijing Western Hills have focused on the pre-1912 period, a few works touch upon the more recent past. For example, in 1987, the Beijing Municipal Bureau of Parks and Greening compiled the first comprehensive documentation of the development of the urban green system in Beijing for the period between 1949 and 1985. Because this book is organized around the general relationship between the green spaces and the urban environment in Beijing, the information about the Western Hills exists in fragments and is scattered through the chapters. But overall, this is a pioneering work for planning because it explains how the
classical gardens and other resources at the Western Hills had been managed and integrated into the new green system during that time.\textsuperscript{44} The following decades witnessed the sporadic appearance of some similar works that referred to the post-1912 development of the parks and green spaces in Beijing in a general way.\textsuperscript{45} But, unfortunately, most of these works were not written according to rigorous academic standards, lacking necessary endnotes and well-structured analysis.

To sum up, the existing literature on the phenomenon of garden making at the Western Hills offers a relatively solid review of its pre-1912 history, but it appears less coherent and rigorous for the period post-1912. Moreover, although the literature refers to the Western Hills landscape features like water and topography as the preconditions for garden making, it rarely goes beyond the confines of aesthetics and recreation to discuss other aspects of the relationship between the hills and the city, such as the transformation of a natural environment and how changing values led to new planning policies.

**Hydraulic System**

In this respect, a parallel line of scholarly endeavor that has developed serves to fill in the blanks by focusing on the abundance of springs and trans-regional watercourses at eastern foot of the Western Hills. The scholar who pioneered this endeavor was Hou Renzhi (侯仁之, 1911-2013). Hou received his doctorate from Liverpool University in 1949 with Sir Henry Clifford Darby (1909-1992) as advisor, and then returned to Beijing to establish the first department of Historical Geography in China. Hou wished to understand landscape changes by examining the relationship between nature and humankind, and most of his studies were based in Beijing. He began his research project in the early 1950s by looking specifically at the water system between the Western Hills
and Beijing City, and published a series of papers that culminated in a comprehensive article in 1989. Based on a combination of textual research and topographical analysis, Hou’s works explained why the springs at the Western Hills had historically served as the only reliable source of water for drinking, farming, sewage and scenery of the city, and how the natural water system had been altered to meet changing human demands. In turn, he also traced how the locations and distributions of the human settlements—city walls, towns, villages, and farms—had evolved in relation to that water system. Together, these findings revealed a more practical aspect of the Western Hills’ relevance to the city because they regarded the landscape not only in terms of visual pleasure and recreational opportunities for urbanites, but also in offering indispensable resources for their urban survival.

Hou’s study of the urban hydraulics has been well received, and his research interests and methods have inspired followers to carry the project onward. While many still focus on the imperial periods like Hou, a few attempt to extend that to the post-1912 period. For example, Li Yuhong (李裕宏) has been writing extensively about the historical transformations of Beijing’s water system since 2001. His study spans from antiquity to the twentieth century, covering both the traditional and modern efforts of local people to manage that system. Li is a very useful resource because of his focus on the post-1912 period. Similarly, Wu Wentao devoted two chapters of her 2013 book to Beijing’s water issues of the past century, in particular a detailed analysis of water planning texts that were produced during the Republican period. The efforts above help to balance the previous over-emphasis upon the imperial past with the modern and contemporary findings.
Scholars like Hou Renzhi and Li Yuhong have made great contributions to the understanding of the role of water in the historic relationship between the Western Hills and Beijing City. Because they have focused on that relationship, their studies are particularly pertinent to this dissertation.

**Pilgrimage sites, rural settlements, and others**

Unlike the garden historians and historical geographers who focus on landscape as a “thing,” a third line of research focuses more on people. It especially emphasizes the nuanced stories of living individuals or groups. Since the 1920s, scholars in this vein have surveyed and collected artifacts, oral traditions, behaviors, and beliefs. These scraps together offer a subtler picture of who has been living in the landscape of the Western Hills and what they have been doing there.

For example, the phenomenon of the pilgrimage to Miaofeng Shan (妙峰山, Amazing Peak Hill), a Taoist sacred place located west to the Western Hills, was investigated by the historian Gu Jiegang (顾颉刚, 1893-1980) and his colleagues at Peking University in 1925. Three years later, based on extensive fieldwork and interview, they published a first few reports on the origins, organizations and rituals of the pilgrimage societies in Beijing at that time. These reports showed how local people were organized by the pilgrimage societies to climb the Miaofeng Hill every April, offering sacrifices to the goddess Bixia Yuanjun (碧霞元君). Because the Western Hills sat between the city and the Miaofeng Hill, pilgrims from the city had to trek along two major routes that stretched from the city gates, through the lower north and south skirts of the Western Hills respectively, and finally to the destination. Along the routes, a number of the rural settlements near the Western Hills prospered as the rest areas for the
pilgrims.\textsuperscript{49} The research on this subject has continued thereafter until the recent years, with Feng Kuan, Jin Xun and Chang Hua as the most notable scholars.\textsuperscript{50} What these scholars reveal is the fact that, although ordinary people who did not have the means to own magnificent gardens in the suburbs or make decisions about the management of the regional landscape, their religious activities—either Buddhist or Taoist—nonetheless had a collective and cumulative impact on regional settlements and infrastructure.

Recently, there have been a few publications about the banner battalions at the Western Hills and its vicinity. These sites were previously the military camps of the gendarmerie of the Qing Dynasty for safeguarding the royal palace gardens, but, along with the Revolution of 1912, they gradually evolved into more ordinary rural settlements. Scholars like Bai Hequn (白鹤群) have been working to trace the rise and fall of the banner battalions at the Western Hills from the eighteenth century to the twentieth century, revealing how the landscape of the region transformed accordingly.\textsuperscript{51} Bai's research is valuable because it reveals that the making of a landscape—whether in the sense of garden design or hydraulic planning—involves power relations. The resources at the Western Hills have never been distributed evenly, and such inequity had to be secured by certain means.

Besides pilgrimage and battalion, scholars also work to bring into the public eye many little-known stories about a wide range of remains, such as town, village, residence, tomb and stone inscription. One of the most notable representatives of this group is Zhang Baozhang (张宝章). Although lacking scholarly training, Zhang has written or contributed to more than forty books ever since the early 1990s, most of which are relevant to the northwest suburb of Beijing. This body of work includes discussions about
a major town located south of the Yuanmingyuan Imperial Garden called Haidian and the
court architect family “Yangshilei” who worked for the royal court of the Qing Dynasty
from the seventeenth century to the end of the dynasty. Zhang also writes extensively
about the individual royal palace gardens like the Changchunyuan Palace Garden and the
Jingming Yuan Palace Garden. His work differs from previous historians in that he
focuses more on the figures and events than architecture.52 Another important scholar in
this regard is Hu Deping who focused on the life story of Cao Xueqing (曹雪芹, 1715-
1763)—the author of the world-renowned book Dream of the Red Chamber—during his
stay at the east foot of the Western Hills.53

Meanwhile, unlike the previous works that emphasize the pre-1912 history, other
scholars have looked at the immediate past. For example, since the mid 1980s, Chang
Hua (常华) has been conducting a pioneering survey of the modern figures relevant to the
Western Hills. He began with Li Shizeng (李石曾, 1881-1973), an influential social
activist during the period of Republican China who had an important impact upon the
modern development of the northwest part of the Western Hills. Chang eventually
expanded his study to include a large number of famous figures.54 Similarly, Wang
Xiaojun, in his 2011 book, also includes much information about the activities of some
modern celebrities at the Western Hills.55 Because most of the celebrities examined are
urbanites rather than peasants, these pioneering works provide some vital clues to the
post-1912 relationship between the city and the hills.

Collectively, this scholarship enriches our understanding of the relationship
between the Western Hills and the city of Beijing. Viewed critically, the scholars
working in this mode are generally more interested in the “people” rather than the “thing”
itself. The inclusive nature of their data gathering is useful, but their works are primarily text-based and lack plans, sections or perspective drawings.

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Many aspects of the Beijing Western Hills, either physical characteristics or historic associations, have been written about, yet it is worth reconsidering the Beijing Western Hills as an integrated whole: because all these aspects were forged on the same rugged terrain and by the same history, they will be understood best in relationship to each other. The dissertation integrates disparate disciplinary perspectives to trace developments in the course of one critical century of change. Beijing was at the center of that changing relationship between city and landscape, and the management solutions that were experimented with in that century were then applied elsewhere in China (or abandoned). Therefore, to understand how landscape management policy was made, one only has to look at the actual inhabited landscape of the Western Hills as well as the government functionaries and experts who sought to impose regulations and define a strategy of development. No such comprehensive study currently exists.

Unlike the existing literature on the subject that has tended to focus on the periods dating from the Qing Dynasty (1644-1912) and before, this dissertation examines the immediate past. This period is selected on the premise that landscape is always in the process of change, so it is more important to understand the mechanism of change rather than adhere to certain historical transections. Particularly, the political upheavals of the twentieth century caused the landscape of the Beijing Western Hills to change in a way that was totally different from its predecessors, binding the city and the hills into an unprecedented entity that forever altered the relationship between Chinese people and
their lands. This recent change deserves a close look if we want to fully understand the landscape of Beijing we see today. Moreover, with a Habermasian insistence that modernity is an unfinished project, I argue that many of the problems that people of the past century strived to solve persist today. The choices they made—land use planning, resource management, or formal experiment—provide direct references to contemporary problem-solving processes. In this sense, this study of the post-1912 period has interpretive objectives as well as instrumental ones.

The works of Zhou Weiquan, Hou Renzhi, Chang Hua and many others form an indispensable foundation for this dissertation. Without their efforts, it would be impossible to move beyond the traditional scholarly realms within which they practiced and contributed a wealth of information. That being said, the existing literature on the relationship between the Western Hills and the city development of Beijing is flawed on three points: no single work covers the full spatial spectrum of the Western Hills; few provide coherent narrative of the modern transformations of that relationship; and the city-mountain relationship has not been highlighted in general.

An Integrated Approach

Problem determines method. The city-mountain relationship as seen in the Beijing Western Hills is a real-world problem that involves a wide range of issues, and its full spectrum cannot be covered by any single disciplinary paradigm. I have thus employed a methodology that W.J.T. Mitchell has called “bottom-up: a compulsive and compulsory interdisciplinarity that is dictated by a specific problem or event.”56 The dissertation is, in David Stradling’s words, “the history of a blending process, of a landscape shaped by
many hands, many minds." In the chapters that follow, five dimensions concerning the relationship between modern city and mountain that has shaped the contemporary landscape of the Beijing Western Hills are identified and characterized: (1) urban planning; (2) cultural heritage management; (3) forestry; (4) hydraulic engineering; and (5) site design. The accumulation of these disparate endeavors together embodies the reinventing of a historic landscape through a collaboration of experts and stakeholders with different backgrounds. Instead of a chronological structure of narrative typical for historical writing, the dissertation is comprised of a series of thematic chapters, with each addressing one single dimension. This is because these dimensions of relation, although evolving, have persisted throughout the century since the end of monarchy despite the regime changes.

The research approach combines a textual analysis methodology with fieldwork, consisting primarily of archival research into legislative histories of key bills and internal memos of administrative programs, acquisition of published documents, and photography and note-taking in the field. Chapter One begins with a review of the pre-1912 linkages between Beijing' Western Hills and its urban area, clarifying who were the major investors in the development of imperial Beijing and how they developed the region. Such discussion establishes the context for the examination of the post-1912 transformations. Chapter Two goes on to analyze the modern relationship between the Western Hills and the city development of Beijing through the lens of urban planning. The chapter looks at the emergence of municipality in Beijing, which turned the Western Hills from a rural area to a suburb and meanwhile made possible the introduction of rational and comprehensive planning as an instrument for city development. The chapter
then focuses on a set of planning texts produced by Beijing Municipal Government, analyzing the role of the Western Hills in the changing urban visions for Beijing at different stages of the past century.

Of course, city planning policies have to be implemented in the real world. There was no guarantee that stakeholders would follow exactly what the planners instructed, so one cannot rely on planning texts to know how the relationship between the Western Hills and Beijing City developed in reality. For this reason, the next four chapters examine in detail what actually happened to each of the major landscape elements including water, forest, historic remains, and land. Chapter Three focuses on water. It looks at how the imperial hydraulic infrastructures on which the city previously depended failed to meet new demands, and how people strove to resolve water crisis. Chapter Four extends the examination to the forest, tracing the development of modern forestry at the Western Hills. It reveals how the forest served at first as a means for improving the deteriorating urban environment, and how it was recently commodified in the form of forest parks to attract tourists and facilitate the urban economy. Chapter Five examines the destruction, preservation, restoration and rehabilitation of the pre-1912 remains at the Western Hills like the imperial gardens. It shows that, while sometimes these remains were well maintained as valued tourist resources for urban prosperity, at other times they were disregarded as examples of cultural decadence incompatible with modernization. Lastly, Chapter Six focuses on land use change. It demonstrates how the previous landscape—being dotted with gardens, temples and rural settlements—was gradually replaced by another mosaic comprising factories, private villas, educational and research institutions, real-estate developments, and public parks.
The final chapter merges the discussions of water, forest, historic remains, and land use at a site scale. It looks at two most representative or controversial design projects that have been built in the Western Hills in the past century: the Fragrant Hill Hotel and the Beijing Botanical Garden. My analysis is based on Norman Newton’s definition of design as “analyzing a problem, designing a solution, and supervising execution of the solution” concerning “human use of outdoor space and the land.” Thus defined, instead of focusing merely on the final forms of these projects, the chapter examines the problem-solving process, looking at why the projects were needed at first place, and how the landscape elements were manipulated and shaped to mediate among competing urban visions and interests.

Concepts and Terminology

I should define a few key terms and concepts that recur in this study. A most important one is “landscape.” This term is one of the richest words in the entire English language, and its ambiguity derives the meaning from the two non-English etymological sources. One source is the German word *landschaft*, which is synonymous with “region” or “territory” and denotes the total character of a region. Unlike this scientific definition, the other source is the Dutch word *landschap* that comes with a connotation of scenery. While the German definition has been historically adopted among geographers, artists and environmental designers favor the Dutch one. The two sources, together with *landskip*, an old English source that signifies the interaction of the territory and human socio-economic practices, were all merged into the contemporary word “landscape.” Due to the subject of this dissertation, I use the term “landscape” to refer to a certain area of
land that features scenic beauty through both natural processes and human interventions. When it comes to those without aesthetic features, I will use words like area, region, or land instead.

With this definition of “landscape,” it is necessary to further distinguish between “cultural landscape” and “historic landscape.” Within academia and professional field, the concept of "cultural landscape" has been used in both narrow and broad senses. Some advocates of a narrow usage argue that cultural landscape studies should focus on ordinary environments like streets or backyards. Following J.B. Jackson, these scholars care most about how people live in and use everyday space to "establish their identity articulate their social relations, and derive cultural meaning." For them, issues concerning production and consumption are regarded more worthy of study than those like aesthetics.60 Such narrow definition of "cultural landscape" reveals a hidden anti-elitist agenda that calls attention to the lives of urban masses or rural peasants, with an apparent emphasis on the contemporary era. However, for others, especially preservation professionals, the concept is applied to wherever relict or continuing human organization of natural elements is clearly displayed, referring to the landscape continuum that extends from wilderness to cityscape. For example, according to UNESCO, "cultural landscape" falls into three main sub-categories, namely, "designed landscape," "organically evolved landscape," and "associative cultural landscape." Similarly, US National Park Service categorizes "cultural landscape" into "historic site," "historical designed landscape," "historic vernacular landscape," and "ethnographic."61 These preservation-oriented classifications are much more inclusive, but, like that of the narrow usage, there is also the dichotomy between high culture and low culture hidden behind them. With the sub-
category "designed landscape" being defined as "aesthetic" and "monumental," it indicates a close relationship with aristocracy or intelligentsia. In comparison, the other two sub-categories appear to be more traditional-folk.

Both the narrow and broad definitions are problematic. They are flawed on two major points. On the one hand, in modern and contemporary landscapes, the traditional distinctions among aristocracy, intelligentsia, folk, or primitive appear increasingly vague. Along with the rise of popular culture and specialization during the past century, it is now difficult to analyze the contemporary reality with the dichotomous system. To a great extent, almost all types of culture have been incorporated into the politico-economic processes based on their utilities in the past several decades. On the other hand, as R.Z. Melnick and A.R. Alanen have argued, landscape is both "a product and a process," and landscape change occurs in both physical and temporal senses. "The intricate relationship between people and the landscape may be based upon what happened in a day, or it may include years of change and transition." From this process-based point of view, most landscapes we see today involve some human-nature interactions that already came to an end at some time in the past as well as others that are still actively continuing. Thus it is difficult to define clearly whether a certain landscape is created intentionally or unintentionally, whether it is created for aesthetic or functional reasons, and also whether people's association with it is material or immaterial.

Because the concept of "cultural landscape" is too controversial and ill defined, this study uses instead "historic landscape" to characterize the Beijing Western Hills. By "historic landscape," I mean an area of historic land shaped by certain bygone traditions that are already dead. While its original meaning no longer evolves, a historic landscape
is not frozen. It will be subject to new mechanisms of human agency, and its combination of natural and historic resources invites new human activities in even more dynamic and complicated ways. In this sense, a historic landscape is at once historic and modern, comprising of both the products of bygone traditions and the manifestations of ongoing processes.

Another problematic term that appears in the dissertation’s title is “modern.” In the West, this term has historically been used in either a relative or an absolute sense. When used relatively, the term is the equivalent of "new" or "contemporary"; and when used absolutely, it often refers to a specific period that began approximately in the 16th century. In the following study, “modern” is used in absolute sense so as to avoid possible confusion. However, for Chinese history, there is no consensus on both the starting date and the periodization of modern China, and scholars often make definitions according to their own disciplinary subjects of inquiry. Because this dissertation addresses the time span between 1912 and 2012, there is no question that its subject falls in the period of Chinese modern history. I do not make further distinctions between modern and contemporary as many will do, because I agree with Jürgen Habermas's eloquent statement that: “modernity is an incomplete project.” If we are still working on the same project as our predecessors did, then it is unnecessary and inappropriate to cut off that continuity.

"Modern" is related to a group of its antitheses, including "classical," "imperial," "feudal," and "traditional." There has long been a misunderstanding that, between barbarism and the advent of Western modernity, China's social structure was feudal. But the fact is that, ever since the First Emperor of China (260-210 BC) abandoned the landed
aristocracy, China had been mostly administered in a centralized county-based system ruled by a single monarch until the collapse of the Qing Dynasty (1644-1912) in 1912. During this period, the territory was not divided and given to landed aristocracy on the scale of feudal Europe. Although land was privately owned, Chinese landlords were always subordinate to a state bureaucracy. Therefore, in this dissertation, the term "imperial" refers to the period in China between 221 BC and 1912 AD, while "feudal" refers to that between barbarism and 221 BC. In comparison, the terms like "classical" and "traditional" are used in a less strict sense, referring to all Chinese periods before modernity in general. Besides, when it comes to property ownership, the study distinguishes between "imperial" and "private," with the former referring to that of royal family and the latter referring to that of ordinary landlords in China. Although both were essentially private ownership, the former differed from the latter in scale and magnificence.

Notes

5 B. P. Keluojwusi, P. 克罗基乌斯, Chengshi yu dixing 城市与地形 [City and topology] (Beijing: China Building & Construction Press, 1982) 5-7, 18-34.
8 For example, contour grading for mimicking stable natural hill slopes is a popular method to achieve the dual goal of beauty and safety. See H. J. Schor and D. H. Gray, Landforming: An Environmental Approach to Hillside Development, Mine Eclamation and Watershed Restoration (Hoboken, N.J.: John Wiley & Sons, 2007).
14 Flint, Building the National Park, 473-485.


Huddleston, *Towards a GIS-based Analysis of Mountain Environments and Populations*, 2-9. East Asia has half of its total land area rugged, the highest share all over the world, and fifty-two percent of China’s territory is not flat.

Xie Ninggao, "Woguo fengjing mingsheng qu leixing" 我国风景名胜区类型 [The types of scenic and historic areas of our country], *Yuanming Yuan* 圆明园 3 (1984): 194-201.


The Chinese National Bureau of Statistics announced in January 2014 that China’s urbanization rate has reached 53.73% by the end of the year 2013.

The Institute of Mountain Hazards and Environment (IMHE) of the Chinese Academy of Sciences has done a lot of research in high mountain hazard mitigation and prevention, holding the bi-lingual Journal of Mountain Science (since 1983) that is particularly devoted to the Tibetan Plateau and the Himalayas. This is the first journal of its kind around the world. The institution has also published some of the earliest introductions to mountain issues, see Chengdu shandi zaihai yu huanjing yanjiu suo 成都山地灾害与环境研究所, *Shandi xue gailun yu zhongguo shandi yanjiu* 山地学概论与中国山地研究 [A general introduction to montology and the study on Chinese mountains] (Chengdu: 四川科学技术出版社 Sichuan Science and Technology Press, 2000).

For example, see Huang Guangyu 黄光宇, *Shandi chengshi xue* 山地城市学 [On Mounturbanology] (Beijing: China Architecture & Building Press, 2002).

See Xie Ninggao 谢凝高, *Zhongguo de mingshan* 中国的名山 [China’s famous mountains] (Shanghai: Shanghai Education Publishing House, 1987). See also Xie Ninggao 谢凝高, *Zhongguo de mingshan dachuan* 中国的名山大川 [China’s famous mountains and rivers] (Beijing: China International Radio Press, 1997). Xie makes an inventory of five categories of mountain: 1) granite mountain; 2) karst mountain; 3) danxia mountain; 4) mountain with other petrographic geomorphologies; and 5) historic mountain. The category of historic mountain is sub-divided into mountain with historic relics, mountain with revolution memorials, and mountain near a historic city, with the last sub-category including the Beijing Western Hills. See also Zhou Weiquan 周维权, *Zhongguo mingshan fengjing qu* 中国名山风景区 [China’s famous mountain scenic areas] (Beijing: Tsinghua University Press, 1996).


The phrase “garden making” here is used in a broad way, including not only those classical ones like royal palace garden, private residence garden and temple garden, but also modern ones like urban park. Although these types differ with each other, they all feature a combination of building complexes and outdoor spaces. For convenience, I will keep using this seemingly premodern phrase so as to be consistent and avoid confusion.


See Hong Ye 洪业, Shaoyuan tulu kao 勺园图考 [An Examination of the Drawings and History concerning the Shaoyuan Garden] (Beijing: Harvard-Yenching Institute, 1933).


Ibid.

See Zhou, China’s famous mountain scenic areas.

Xie, China’s famous mountains.


Hou’s first article on this topic is published in 1951, see Hou Renzhi 侯仁之, “Beijing Haidian fujin de dixing, shuidao yu julu” 北京海淀附近的地形、水道与聚落 [The Relief, Drainage and Settlements in the Environs of Hai-tien, Peking], Acta Geographica Sinica 18 (1951): 3-22.


See Gu Jiegang 颜颉刚, Miaofengshan 妙峰山 [The Miaofeng Hill] (Guangzhou: Zhongshan University, 1928).

See Feng Kuan 奉宽, Miaofengshan suoji 妙峰山琐记 [Notes on the Miaofeng Hill] (Guangzhou: Zhongshan University, 1929); Jin Xun 金勋, Miaofengshan zhi 妙峰山志 [The Annals of the Miaofeng Hill] (unpublished, with only manuscripts); Chang Hua 常华, Miaofeng xiangdao kaocha ji 妙峰香道考察记 [An Investigation on the Pilgrimage Routes to the Miaofeng Hill] (Beijing: China City Press, 1997).
51 See Liu Maokun 柳茂坤 and Bai Hequn 白鹤群, Jing qi wai san ying 京旗外三营 [The Three Banner Battalions at the Outskirts of Beijing City] (Beijing: Beijing Press, 2000). See also Chang Lin 常林 and Bai Hequn 白鹤群, Beijing Xi Shan jianrui ying 北京西山健锐营 [The Jianrui Battalion at the Western Hills of Beijing] (Beijing: China Academic Press, 2006).


53 See Hu Deping 胡德平, Cao Xueqin zai Xi Shan 曹雪芹在西山 [Cao Xueqin at the Western Hills] (Beijing: Culture and Art Publishing House, 1982).


57 Stradling, Making Mountains, 15.


64 See Jürgen Habermas, The Philosophical Discourse of Modernity (Cambridge, MA: The MIT Press, 1987).
2. Ruin & Modernity: Portrait of an Imperial Landscape

The physical landscape of Beijing’s Western Hills as we see it today is visually ambiguous and incongruous. Many pieces of this landscape are the developments of recent decades that have been built anew or on top of the old, and some others are the physical remnants from the more distant periods of the past. The complex entanglement of the old and the new in the Western Hills reveals the ways that various temporalities are overlapped or juxtaposed with each other.\textsuperscript{65} It should be noted that such a mixture is not accidental. Most of the past remnants in the present-day Western Hills, especially those of significant historical, artistic, or scientific value, are now under the municipal administration, being labeled as heritage sites at various levels. This indicates that the very survival of the old in the present has been the result of intentional preservation and management.

The major features of past remnants that we can find in the Western Hills nowadays can be discerned in three heritage lists at the municipal, national, and international levels. Beijing Municipal Heritage List is a collection of sites that have been announced by the municipal government in 1957, 1979, 1984, 1990, 1995, 2001, 2003, and 2011. This list includes thirty-three sites in the Western Hills, some of which are also included in some other lists at a higher level, such as the National Heritage List and the World Heritage List.\textsuperscript{66} Among these thirty-three sites, twenty-two of them date back to before 1912, and the rest belong to the later period of 1912 to 1949. In comparison, among the fourteen sites that are elevated to the national importance, the ratio of the pre-1912 to the post-1912 is 11 to 3, a much higher one than the former. When it comes to
the World Heritage List, only the Summer Palace is included (Figure 2. 1). Therefore, chronologically, the majority of the heritage sites in the Western Hills belong to the period before 1912.

![Bar chart showing the number of sites in the Western Hills inscribed in three heritage lists](http://www.bjww.gov.cn/wbsj/bjwbhdw.htm)

**Figure 2.1** The number of sites in the Western Hills inscribed in three heritage lists, with the data up to January 2014. Data source: the website of the Beijing Municipal Administration of Cultural Heritage, accessed July 21, 2014, [http://www.bjww.gov.cn/wbsj/bjwbhdw.htm](http://www.bjww.gov.cn/wbsj/bjwbhdw.htm).

Of course, the low percentage of post-1912 sites in the current heritage lists does not necessarily mean that they are indeed small in quantity. The processes of heritage inscription are essentially value judgments, which change in relation to the larger political, social, and economic context. The past few decades witnessed an “ecumenical inflation of heritage practices” in geographical, chronological, typological, and audience terms. Not only do industrial sites increasingly proliferate in heritage lists, but even intangible aspects of culture are also accepted as a type of heritage. As for the Western Hills, the post-1912 sites were not included in the municipal heritage list until 1979 and
did not appear in the national heritage list until 2001. It is possible that there exist even more post-1912 sites of significance, which might be inscribed in the near future.

Although these heritage lists are potentially subject to change, they are at least useful in identifying the major types of the pre-1912 sites in the Western Hills. In comparison to that of the more recent past, the inventory of the pre-1912 sites is relatively complete because they could hardly survive the constant wars and social turmoil of the twentieth century if they had not been noticed and considered worthy of protection. The twenty-two pre-1912 sites that are inscribed in the Municipal Heritage List fall into six categories: imperial garden, Buddhist temple, hillside tomb, military site, hydraulic work, and glacial striation. Among them, Buddhist temple and imperial garden are the two types that most of the sites belong to, and they are followed by elite tomb with about half of their numbers. The sites of the other types are comparatively small in number (Figure 2.2). Similar percentage is also reflected in the National Heritage in which only glacial striation is excluded (Figure 2.3). Therefore, before the advent of modernity, these types of sites comprised of the major part of the landscape of Beijing’s Western Hills (Figure 2.4). Because glacial striation was formed a very long time ago and has little relationship to human society, this chapter focuses on the remaining five types of sites, examining how they emerged and correlated with the city lying to their southeast. The chapter ends with a sketch of the key happenings that turned the cultural landscape of Beijing’s Western Hills into a heritage one.
Figure 2. 2 The number of six types of pre-1912 site in the Western Hills inscribed in the Municipal Heritage List, with the data up to January 2014. Data source: the website of the Beijing Municipal Administration of Cultural Heritage, accessed July 21, 2014, [http://www.bjww.gov.cn/wbsj/bjwbdw.htm](http://www.bjww.gov.cn/wbsj/bjwbdw.htm).

Figure 2. 3 The number of five types of pre-1912 site in the Western Hills inscribed in the National Heritage List, with the data up to January 2014. Data source: the website of the Beijing Municipal Administration of Cultural Heritage, accessed July 21, 2014, [http://www.bjww.gov.cn/wbsj/bjwbdw.htm](http://www.bjww.gov.cn/wbsj/bjwbdw.htm).
Figure 2. 4 Sites in the Beijing Western Hills that have been inscribed on the municipal heritage list up to 2011 (by author)
**Hydraulic Work**

In 2013, the Heilong Pool, a site on the Huamei Hill of the Western Hills with a shrine to pray for rain standing nearby, was inscribed in the National Heritage List as one component of the Grand Canal. As a trans-regional heritage corridor, the Grand Canal runs north to south through the North China Plain, linking Beijing to the southern part of China. Between Tianjing and Hangzhou, it takes two routes, one built during the Sui Dynasty (581-618) and the other during the Yuan Dynasty (1271-1368). In Beijing, this heritage corridor begins at the Baifu Spring and passes through the Kunming Lake of the Summer Palace and the Shichahai Lake, and continues through to the Wenyu River that flows southeast to Tianjin before entering into the sea (Figure 2.5). According to the “Preservation plan of the Grand Canal (Beijing part),” the Summer Palace (the Longevity Hill) and the Jingyi Palace (the Yuquan Hill), two sites that had already been inscribed as the National Heritage sites prior to that, also needed to be protected together. Therefore, the Heilong Pool, the Summer Palace, and the Yuquan Palace are the three sites in the Western Hills that are historically grouped together with the Grand Canal.

To understand the relationship between the Western Hills and the Grand Canal, one first has to know who had been the major developers in pre-1912 Beijing. In its history of more than three millennia, the city and the region of Beijing have had a variety of names, from Jicheng and Ji at the beginning, to Jingshi and Shuntian at the early twentieth century. Jicheng, the seat of a regional kingdom that appeared in the written history of China around 1045 BCE, was the first recorded human settlement in the region. From then to the tenth century CE, this settlement had served as a border town of military and commercial importance for various national dynasties. In the tenth and twelfth
centuries, the settlement was twice chosen as a capital for two regional empires established by the nomads of the north. From the early thirteenth century, when the Mongols built a new city in the region and designated it as the imperial capital of all China, until the present, the city has been the political and cultural center of the entire country. The rise of Beijing as a place of national significance had been closely related to the dynastic powers.


Dynastic rulers were attracted to Beijing for its location in the borderland between the agriculture-based central plains and the nomadic areas of Mongolia and Manchuria (Figure 2. 6). Within its 9.6 million square kilometers of territory, China features three-terrace topography, which is characterized by a plateau with an average altitude over
9800 feet in the west, the plains and hills with an average altitude below 3200 feet in the
east, and the hilly highlands and basins in between. When combined with the factors of
climate and rainfall, China is further divided into eight homogeneous macro-regions.

Figure 2.6 Location of Beijing in the national topography of pre-1912 China (by author, with the
mountain ranges drawn on the basis of Ren Mei’e’s "Zhongguo zhuyao shanxi shiyi tu" 中国主要山系示
意图 [Map of China’s major mountain ranges], Zhongguo ziran dili gangyao, 11.)

In the pre-1912 era, agricultural practices had been mainly confined within the
three macro-regions in the southeastern China, because the rest were either too arid or too
cold for farming. The regions now known as Manchuria, Mongolia, and Tibet were inhabited by nomadic tribes who usually could not make enough to feed or clothe themselves and thus had to loot affluent agricultural areas for survival. Beijing, as the interface between the Mongolian and Manchurian nomadic areas and the farming area, was strategically important for the northern nomads to invade southward and the southern peasants to defend themselves.

Beijing also attracted dynastic rules because of the natural features of the northern part of the North China Plain. The Taihang Mountains and the Yan Mountain stretched end-to-end from the eastern seashore to the Yellow River, marking the boundary between the northern nomadic areas and the southern agricultural ones. This boundary presented a natural obstacle of human movement, leaving only three mountain valleys and the seashore as the passes, and Beijing’s proximity to these passes placed it in a strategically important location for both northern nomads and southern peasants. More importantly, because the numerous rivers that originated from the Taihang Mountains flowed eastward into the ocean and left numerous lakes, ponds, and swamps along the way, most floodplains south of Beijing were often impassable. Ancient people were forced to walk along the eastern foot of the Taihang Mountains where the terrain was relatively elevated and the bedrock channels carried streams without overflowing. Beijing sat at the northern terminus of this route from which the roads leading to the valley and seashore passes began to diverge. Therefore, not only nomads from Mongolia and Manchuria needed to seize Beijing before invading further southward, but peasants also had to get Beijing so as to defend the four nearby passes (Figure 2. 7). No matter which side rose to power, its best armed force would have to be stationed in this region of conflict so as to better guard
against potential threats from the other sides. Fearing that local officials who administrated Beijing might take advantage of that force to usurp the throne, dynastic rulers themselves often dwelled in Beijing so as to directly control their armies.

Ruling political elites, military supporters, and civil officials comprised a majority of the resident population of Beijing throughout most of the imperial period. Data indicates that from the tenth century to the early twentieth century, the population
of Beijing had steadily increased, and the city alone had a population of around one million since the fourteenth century (Figure 2.8). In the pre-industrial era, it would be a great challenge for a single region to feed such large a concentrated population. Worse still, a majority of Beijing’s population did not perform manual labor themselves, while local merchants and laborers merely provided vegetables, fruits, and handicrafts. The most direct approach to solving the supply crisis was to grab grain and goods produced elsewhere to Beijing, which was politically viable because Beijing was where dynastic rulers resided.

Technically, before the advent of mechanical power, water transport was the most efficient way of delivering bulk goods. The abundant rivers on the North China Plain
made it possible to transport grain and goods within the region by water. Two grand canals were thus built: one in the seventh century under the reign of the Sui Dynasty (581-618), and the other in the thirteenth century once Mongols took control of the whole country. Both started at the city of Hangzhou and passed all the way through the North China Plain to the city of Tianjin, the place where most rivers from the Taihang Mountains converged into the Hai River and then entered the sea. From Tianjin, barges could sail up the Wenyu River to the eastern outskirts of Beijing, from which another canal was built to link the Wenyu River to the city. In this way, dynastic rulers could efficiently collect grain and goods from the North China Plain.

However, the canal linking the city and the Wenyu River had no natural source of water itself, and thus it had to be sustained by the aqueducts that transported water from elsewhere in the region. Ancient residents in Beijing tried to bring water from various sources of water within the region, but the exact details of these earlier efforts were not well recorded. The first hydraulic work that scholars now know about for sure was constructed under the reign of the Mongols as a part of the reconstructed Grand Canal. Three aqueducts were built to collect water from both spring and river water. One began at the Baifu Spring and ran through the Heilong Pool to the Wenshanbo Lake (now the Kunming Lake of the Summer Palace) that originally received water from the Yuquan Springs. Thus the Wenshanbo Lake functioned as a reservoir from which another aqueduct linked to the Grand Canal. The second aqueduct directly transported water from the Yuquan Springs to the imperial palace as exclusive-use royal water. The last one brought water from the Yongding River to the canal. At the same time, two embankments were also built on the east side of the Wenshanbo Lake and that of the Yongding River so
as to secure water flow and control flood. Lastly, a series of water gates were built along these watercourses (Figure 2. 9). The three aqueducts were not all successful. The torrents and sediments of the Yongding River frequently destroyed the artificial watercourses downstream, and runoffs from the rugged terrains often cut off the aqueduct between the Baifu Spring and the Wenshanbo. Both were abandoned by the fifteenth century, and only the Yuquan Springs continued to serve as the major source of water for Beijing’s Grand Canal.  

Figure 2. 9 The hydraulic work in Yuan Dadu (by author)
But this source of water alone was limited in volume. The growing demand for water prompted Emperor Qianlong of the Qing Dynasty (1711-1799) to construct a second comprehensive hydraulic work. Emperor Qianlong first enlarged the lakes at the foot of the Longevity Hill and the Yuquan Hill as the reservoirs and reconstructed the previous embankment to fit the new lakeshore. He then built new aqueducts to collect the streams originating from the five springs at the eastern part of the Western Hills and to transport them to the enlarged lakes. To protect these aqueducts from the torrents of the rugged terrain, Emperor Qianlong ordered that two discharge trenches be dredged at the east foot of the Western Hills: the one at the north ran northeast into the Wenyu River, and the other at the south ran southeast through the moats of the city to the Grand Canal. For the latter, Emperor Qian particularly dredged and enlarged the Yuyuantan Lake so as to facilitate flood-control (Figure 2.10). In this way, more water was captured to support urban growth of Beijing.

Therefore, the major link between the Western Hills and the Grand Canal was spring water. The water from the springs in the northeastern part of the Western Hills had been of critical importance to the operation of the northernmost section of the Grand Canal. Before the collapse of absolute monarchy, the eastern part of the Western Hills had been integrated into urban Beijing as one part of a trans-regional hydraulic infrastructure. It should be noted that the Grand Canal in Beijing was included into the 2013 National Heritage List mainly based on its conditions during the Yuan Dynasty, but not including those elements that no longer exist nowadays like the aqueduct linking to the Yongding River.
Palace Garden and Battalion Camp

Although the hydraulic works in the northeastern part of the Western Hills were primarily associated with the Grand Canal, they also gradually made the flatland at the eastern foot of the hills safe for human dwelling. Before the Yuan Dynasty, the area between the Western Hills and the walled city were mostly inhabitable due at first to river flooding and then to hillside torrents. The Tertiary and the Quaternary periods witnessed the uplifts of the areas where the Western Hills and downtown Beijing now located, which caused the lands between them to sink relative to the former two.78 Then, the
Yongding River, a watercourse that emerged west of the Taihang Mountains, flowed northeast along the low-lying east foot of the Western Hills after passing through the mountain area to the plain of Beijing. Later, this low-lying area rose and became choked due to sediment deposition over time, forcing the river to move southwest gradually to its present course, leaving a vast alluvial fan dotted with ponds and lakes (Figure 2.11).
After that, the area became a catchment basin where surrounding surface water from rain and spring converged. Especially during monsoon season, sudden rainstorms would bring runoff rushing down the Western Hills, causing inundation at its eastern foot. As late as the fifteenth century, the city was built on the alluvial terrace of more than fifty meters (164 feet) above sea level so as to stay away from floods, leaving the land northwest of it largely undeveloped. It was due to the flood-control facilities constructed during and after the Yuan Dynasty that the whole area became increasingly populated.

The first flood-control facility of critical importance to the development of the eastern foot of the Western Hills was the embankment on the east side of the Wenshanbo Lake. First built during the Yuan Dynasty, this embankment protected the lowland east of it (now known as Haidian) from inundation, the water of which was instead sustained by the nearby springs. From then on, Haidian began to appear in poems and travel notes as a scenic area characterized by lakes, springs, and hills. During the Ming Dynasty, peasants who migrated from south China initiated mass agricultural development in this area, soon turning the waterfront into paddy fields, lotus ponds, and fishing ponds surrounded by rural settlements and roads. Later, wealthy and powerful residents also came from the city to build villa gardens where they could enjoy the scenic beauty. The two best-known private villa gardens built during the Ming Dynasty were the Qinghua Garden and Shao Garden, both of which took advantage of the spring water to beautify the residential environments. After the Manchu tribes rose to power and seized Beijing in 1644, the first few rulers continued to develop Haidian by reconstructing and expanding the old gardens as well as building new ones, among which the largest were the
Changchun Palace Garden and the Yuanmingyuan Palace Garden. Throughout this period, the embankment on the east side of the Wenshanbo Lake built by the Yuan engineers had protected the human settlements east to it. As for the flatland west of Haidian that still suffered from hill floods, these emperors only built a few simple buildings on the hillsides of the Yuquan Hill and the Xiang Hill for temporary residence.82

Such limits of development were removed by the second flood-control facility commissioned by Emperor Qianlong. Besides the adjusted lakeshore embankment, the two discharge trenches made the previous floodable land between the main body of the Western Hills and Haidian safe for human dwelling. With this new hydraulic infrastructure, Emperor Qianlong was able to fully use the flatlands and the hills within this area, creating a huge cluster of palace gardens. Each garden was a walled enclosure with residential and recreational facilities inside. The five best-known gardens were later termed together as “Three Hills and Five Gardens,” referring to the Jingyi (on the Xiang Hill), the Jingming (on the Yuquan Hill), the Qingyi (on the Longevity Hill, renamed as “Yihe” in 1888 and widely known as the Summer Palace), the Yuanming (also known as the Old Summer Palace), and the Changchun gardens. The fact that the former three together enclosed all the major springs and hydraulic faculties indicates that the gardens might be built also for safeguarding the water supply. Even the lands in between were developed into paddy fields, the yield of which was designated as tribute exclusively for the royal court. Sixteen battalion camps were stationed across the area to safeguard the royal properties. Therefore, from the eighteenth century onward, the northwest suburb of
urban Beijing became a privileged zone for the royal family’s own use, forbidden to ordinary people (Figure 2.12).

Figure 2.12 Three Hills and Five Gardens in the eighteenth century (by author)

The design of these palace gardens reveals how the structures were adapted to three basic types of site: flatland, individual hill, and hillside. Each site type posed both problems and opportunities for garden making. The flatlands, mainly situated within low-lying Haidian, generally lacked topographic changes and thus could be monotonous. Imperial designers solved this problem through massive land transformations. For example, in the Chuangchun Garden and the Yuanming Garden, they dug many interconnected new ponds and ditches and diverted water to them from nearby sources to make a new
attractive topography. They then added pavilions, courtyards, bridges, roads, rockeries, and plants. Many scenic spots were modeled on the private gardens in the lower Yangtze River, which the Qing emperors visited during their southern tour. The palatial zones near the main entrances were organized symmetrically and sequentially along the north-south axes, while the areas beyond yielded to a more free arrangement. In this way, the original lands of flatness became rich in variations but still orderly (Figure 2.13).

The Qingyi Garden and the Jingming Garden were two gardens that enclosed individual hills wholly, and for these the imperial designers adopted a different approach. Although the Longevity Hill and the Yuquan Hill only rise 160 feet above the surrounding plain, their peak annual discharge happens all at once during monsoon...
season, which poses a danger. Designers handled this by expanding the original water bodies at the foot of each hill as reservoirs that were then wrapped around each hill. When rainwater ran down the hills, these water bodies could collect and store it or simply discharge it downstream. Protected from inundation by such a hydraulic system, residential and recreational facilities were then built on each hill’s gentle slopes (avoiding gullies) and at its foot. If the elevation was a liability in some respects, it also offered benefits. Imperial designers took advantage of the elevations to provide spatial order and visual focus so that commanding buildings like pagoda stood on the hilltops. These were the starting points for axes that extended outward and gave structure to the gardens beyond (Figure 2.14).

Figure 2.14 Comparison of two palace gardens featuring both hill and lake (by author)
Lastly, the Jingyi Garden, a hillside gardens without any large water body, resembled the nearby Buddhist temples in terms of site selection and architectural arrangement. Emperor Qianlong enclosed within this garden two pre-existing temples—the Xiangshan Temple and the Hongguang Temple—and built two new ones called the Yuhua Temple and the Zhao Temple. The hillside was divided by walls into three functional zones: the southeast zone was for emperors to receive officials and live temporarily; the northeast zone was for accommodating Lama leaders from Tibet; and the high-elevation between was less dense and dotted with a few simple buildings and courtyards. A central axis ran east to west from the middle of the garden site, with the main gate and other major buildings complexes sitting along and aside. All the courtyards, single buildings, and temples were situated carefully to avoid gullies and take advantage of the three natural springs. In general, the area of low elevation where slope was gentle was the focus of development (Figure 2.15).

Figure 2.15 An analysis of a palace garden on the hillside (by author, the plans based on Zhou, Zhongguo gudian yuanlin shi, 363)
Therefore, by the eighteenth century, the flat, waterfront, and hilly lands between the Western Hills and the city of Beijing had been developed into a number of magnificent palace gardens according to the above three patterns of design. From then on, its scenic beauty, abundant spring water, and fertile alluvial soil began to attract more and more people to visit, dwell, and cultivate the land. But the Qing rulers who placed the gardens off-limits, entailed the paddy fields, and guarded the whole area curtailed these activities. While the Qing emperors directly inherited the Forbidden City and made limited investment in it, they spent a huge portion of their wealth on the development of Beijing’s northwest suburb. In this sense, the garden cluster symbolized a summit of Chinese absolute monarchy.

**Buddhist Temples**

Long before garden making extended to the Western Hill, this rugged terrain had been transformed by another type of human activity. As early as the fourth century, Buddhists had begun to build temples and roads on the hillsides of the Western Hills as well as other mountains and hills within the region. But the temples (many of them ruined) that can be seen there today are mostly the later remnants of the Ming and Qing dynasties, because the earlier temples did not survive dynastic changes, vandalism, or reconstruction. The sites where these temples stand today have three common features. First, they are close to spring sources emerging from hill fractures. Second, the locations were enclosed by hills at three sides, leaving open only the south side (or sometimes the southwest and southeast), so that, on a gentle slope of 15-35 degrees, the dwellers were exposed to the sun. Additionally, in a region where the prevailing winter wind blows
northwest, the enclosure walls could protect the area inside from exposure to cold winds. Third, sitting high on hillsides, the temples avoid the low-lying lands at the foot of the hills where flash torrents during monsoon season might cause inundation or even landslides. Judging by the above three features, the locations of the Buddhist temples are the most livable places in the Western Hills (Figure 2. 16).

The most distinctive feature of these temples is their adaptation to the rugged topography. The extant temples in the Western Hills are essentially clusters of courtyards, differing only in elements within the courtyard, such as the pagoda in the Biyun Temple.

Figure 2. 16 Major Buddhist Temples in the Western Hills during the Qing Dynasty (by author, the water system drawn according to the conditions before the eighteenth century)
and the bell and drum towers in the Wofo Temple and Fahai Temple. The main buildings of most temples are placed separately in different courtyards, with that of the Fofo Temple as the only exception. This temple follows an earlier pattern that was popular during the Tang and Song dynasties, which featured a single oblong courtyard with all the main buildings within it. Such change in layout is also reflected in the fact that pagodas are present in some temples but absent in others. Although originally serving as the focal point of the Buddhist temples in ancient India, pagoda, after being introduced to imperial China, was gradually replaced by the hall. Besides, the courtyards are situated on the hillsides that have been graded into stepped terraces, causing people to proceed through the horizontal axial sequences while at the same time ascending higher and higher, experiencing a stronger feeling of awe and veneration (Figure 2.17).

Could the mountain slope’s advantage of inspiring religious emotion be a sufficient explanation for the Buddhists’ enthusiasm for hillside development? Such grading takes a great deal of labor and capital. Scholars point out that hillside temples were rare when Buddhism was originally practiced in ancient India and later China of the Han Dynasty. At that time, monks usually built temples in major cities so as to preach to more people, and equally important, to get more food and money because they did not do manual labor themselves. Only during the period between the third and the sixth centuries, a chaotic time when the country split into numerous feuding kingdoms, did Buddhists began building temples on hillsides widely. The exact reasons why hillsides became attractive to Buddhists during that period are still unclear, because the Buddhists themselves did not leave relevant accounts.
Historians have proposed three possible explanations. First, the prolonged political instability resulted in a yearning for a quiet secluded life apart from masses, so remote rural hilly lands became attractive. Second, in response to the decreasing secular donations as a result of wars, Chinese monks of the time began to perform manual labor and establish self-sufficient temple economies for survival. Third, they reinterpreted the original Buddhist theories, arguing that not only creatures but also inanimate objects
embodied the Buddhist dharma. Accordingly, by living out in hilly landscape, people would be exposed to more forms of Buddha and thus understand truth in a more holistic way.\(^{85}\) No matter which explanation is right, an undeniable fact was that the hillside temple became an institutionalized type after the sixth century.

The mass construction of Buddhist temples on the Western Hills also synchronized with the changing status of Beijing in the national political geography. Ever since the Khitan tribe elevated it to a capital of the Liao Dynasty (916-1125), Beijing had gradually replaced Luoyang and Xi’an as the national center of Buddhism.\(^{86}\) From the tenth century onward, all the major Buddhist temples in the Western Hills had been constructed under the economic support of the dynastic rulers in Beijing who provided money, labor, and land. These ruling classes themselves also frequented the hillside temples.\(^{87}\) For example, Emperor Zhangzong of the Jin Dynasty (金章宗, 1168-1208) built eight courtyards beside the existing hillside temples in the Western Hills, and he regarded the Jade Fountain Hill and the Fragrant Hill as two of the eight best scenic spots in Beijing. However, none of these courtyards were well recorded and they did not survive.\(^{88}\) In this sense, besides their religious functions, the Buddhist temples also served as the scenic spots for royal leisure and recreation.

The physical development of Buddhism in the Western Hills reveals two dimensions of the link between religion and politics. On the one hand, Buddhists understood that, in a highly centralized empire like China, the support of the central political authority was indispensable to the spread of religion. Ruling groups could provide not only political patronage like exemption from tax and military service, but also donation in forms of money, goods, and real estate. But, on the other hand, monks
benefited from secular powers at the cost of independence and freedom. From the seventh century onward, Buddhism in China had been completely under the control of central political authorities. One had to get government permits so as to be a monk, and temples were strictly limited in number and scale. Whenever temple properties and monk numbers grew so huge as to interfere with secular interests, the central government usually took strong measures against Buddhism by shutting down temples, confiscating properties, destroying Buddha figures and goods, and forcing monks to resume secular lives. Above all, the religious activities of any sect had to help legitimize or consolidate political regimes, or the sect would be suppressed.89

Because of this close relationship between religion and politics, the Buddhist temples in the Western Hills could not be seen as separate from Beijing’s urbanism in the pre-1912 era. Although they appeared to be the places for ascetics and recluses, this is deceptive because these structures were actually constructed, maintained, and controlled by dynastic rulers who also built the city. A potential danger of those links was that, when there was change in power, the management of the Buddhist temples would be also threatened.

**Hillside Burial**

The pre-1912 tombs in the Western Hills that have been inscribed as the Municipal Heritage sites include the Tomb of Han Dynasty, the Tomb of Emperor Jingtai (景泰陵) of the Ming Dynasty (1368-1644), and the Tomb of Tian Yi (田义墓) of Ming Dynasty. Archaeologists are still unsure about the owner of the first one, but they believe...
that the tomb belongs to a prince or his wife in the Han Dynasty. As for the second tomb, the reason why Emperor Jingtai was not buried together with the other emperors of the Ming Dynasty was due to his failure in the political struggle with his brother who forbade the former being buried as an emperor but instead as a princess. Besides the above three, there also exist a number of the princely tombs of the Qing Dynasty as well four royal concubine tombs of the Ming Dynasty, but most of them are in ruin or have been robbed. In general, most of the pre-1912 tombs in the Western Hills belonged to the high-ranking royal members and court servants second only to the emperors (Figure 2.18).

Figure 2.18 The pre-1912 tombs in the Western Hills, including both the extant and the relic (by author)

Although differing in completion time and ownership, these tombs have two common features. Most are concentrated in four locations of the Western Hills:
Moshikou, the Baobao Hill, the Long’en Temple, and the Jin Hill. Hidden within these hollow areas enclosed by hills or ridges and open only on the south side, the tombs perch on hillsides and stay away from gully torrents and low-lying floodable lands. Second, they are designed with courtyards as the basic spatial unit, which are usually symmetrically arranged along central axes. Similar features can also be seen in the tombs of the emperors as well as their wives, which are located in the four locations of Beijing’s outer suburbs: the Jin Tombs and the West Qing Tombs are sitting at the eastern foot of the Taihang Mountains, and the Ming Tombs and the East Qing Tombs are at the south foot of Yanshan Mountain. Although these tombs appear much more magnificent in scale and luxurious in decoration, they share the same pattern of site selection and courtyard arrangement with those in the Western Hills.\textsuperscript{93} Such similarities indicate that hillside burial was a highly conventional custom for its time (Figure 2.19).

The kind of hillside burial that we see in the Western Hills and elsewhere around Beijing was an old but evolving custom. It began with Emperor Wen of the Han Dynasty (203-157 BCE) who had witnessed how the magnificent tombs of the previous rulers were robbed once the regimes collapsed. Thus he decided to make his tomb as humble as possible, simply digging a chamber into the hillside without a great pyramid or treasure. After him, this pattern of burial was followed by some emperors and finally institutionalized during the Ming Dynasty. In its later development, hillside burial in China gradually diverged from Emperor Wen’s original intentions, becoming increasingly luxurious.\textsuperscript{94}
Moreover, this custom had been increasingly integrated with a geomantic theory called Feng Shui, in which the natural beauty of hill and water was used to symbolize the deceased’s merits and achievements. Geomantic practitioners advocated an ideal pattern of burial site in which the tomb sits on the gentle southern slope of a high mountain range, which is enclosed by low hills lying at the other three sides and surrounded by streams or gully torrents running around. They argued that such site could trap Qi, a mystical force capable of engendering life. The four popular burial areas in the Western Hills as well as the other four royal ones within the region fit the recommended pattern.
exactly. Apart from mysticism, this pattern has all the advantages that we have seen in the sites of the Buddhist temples: sufficient daylight, windshield, and flood protection.

The popularity of the Western Hills for burial associated this rugged terrain with the social class of pre-1912 urban Beijing. Because the sites that fitted the burial ideal were limited in number and area, only those who possessed power and capital had priority of land use. In this sense, the hillside tombs in the Western Hills were no different to the nearby palace gardens and Buddhist temples in terms of the mechanism of power. In addition, the proliferation of elite tombs in the Western Hills also led to population growth in the area. To protect their tombs from robbery and disrepair, owners sent soldiers and servants to guard there all year round or hired peasants to live there and cultivate nearby lands. These people gradually multiplied and formed stable village-like settlements. This process played an important role in the early human occupation of the Western Hills.96

The princes, concubines, and court eunuchs buried in the Western Hills were all elite residents of urban Beijing in their times. Like the emperors, these people were the integral parts of absolute monarchy, and they relied on that power structure to obtain capital and labor indispensable for the construction and maintenance of their hillside tombs. Many tomb keepers did not perform manual labor but relied on their salaries for survival. Therefore, the elite tombs in the Western Hills were inseparable from other processes that stimulated Beijing’s urbanism before 1912.
Summary

From ancient times to the nineteenth century, Beijing’s Western Hills were transformed by human activities that included hydraulic engineering, secular recreation, religious practice, and burial customs. The most decisive mechanism in the making of this cultural landscape was absolute monarchy, which influenced most of the physical transformations of the Western Hills since the tenth century. It should be noted that this pattern of development excluded some other forms of resource utilization that might threaten the scenic beauty and water sources of the Western Hills. For example, although the western part of the Western Hills had a reserve of lignite coal, mining was mostly not allowed during the Ming and Qing dynasties. Even after Emperor Qianlong opened that area for private sectors so as to increase coal supply for the palace gardens, those who mined coal without permission would be put in jail or even banished.97 Similarly, grazing and lumbering was also highly controlled nearby the gardens, temples, and tombs.98 In general, the dominant pattern of landscape development and management in the Western Hills was not for economic production because the developers and managers of this landscape did not intend to make money out of the rugged land. Instead, a minority of upper classes sustained all the palace gardens, Buddhist temples, elite tombs, and their affiliates, which generated few revenues or other output for Beijing’s urban economy. Even the hydraulic facilities that played a critical role in the operation of the Grand Canal were built for the exploitation of underclasses across the country. Like the city of Beijing, the landscape of the Western Hills was in essence a place that consumed resources for the profit of a very small group of people.
This pattern of landscape management changed with the coming of European colonial powers. Because of low Chinese demand for European goods and high European demands for Chinese goods, European countries faced severe trade deficits from the sixteenth to the nineteenth century. In order to fix the imbalance of trade, British traders started to sell Indian opium to China in return for tea, a trade arrangement that was soon resisted by the Qing government. The disputes over trade finally led to the First Opium War in 1840 in south China, in which the political weakness and technological underdevelopment of the Qing empire was exposed to the world. Thereafter more European colonial powers went to China, demanding open ports, land, and permission for foreigners to travel throughout the country. When refused, they resorted to armed aggressions.

Two major wars thereafter happened in Beijing. In 1860 during the Second Opium War, the Anglo-French forces reached Beijing and stationed themselves in Haidian (海淀, a town south of Yuanmingyuan), while the Emperor Xianfeng (咸丰, 1831-1861) fled and those who stayed behind hid within the city. Within a few days, in order to force the Qing government to surrender and sign treaties, the British and French soldiers pillaged and burned the major palace gardens at the east foot of the Western Hills. Then, once the foreign forces left the area, local robbers continued to loot the unguarded imperial properties. When the Qing court resumed the control of the area, only the topographic features like hills and lakes were left, while most human structures were gone and trees burnt. Four decades later when the allied European forces captured Beijing, they did the same thing, again followed by looting. During these dark years, although the Qing court made every effort to restore the gardens, they were unable to take
care of all the damaged garden properties due to the increasingly deteriorated financial conditions of the empire. Only the Qingyi Garden at the Longevity Hills was reconstructed and renamed as the Yihe Garden (also known as the Summer Palace), becoming the only imperial garden to survive into the twentieth century.99

The garden ruins at the east foot of the Western Hills symbolized the twilight of an ancient civilization based on agriculture and absolute monarchy. Along with the economic plunder of foreign powers came Chinese social activists who began to undermine the legitimacy of the imperial empire, criticizing everything from the past: monarchy, Confucianism, Buddhism, and Daoism. Various nationalist agendas that aimed at modernizing China proliferated and finally converged to overthrow the Qing government in the Revolution of 1911. The establishment of the Republic of China in 1912 created a rupture between “before” and “after,” relegating many physical features of the country to mere reference points for the present. The Beijing Western Hills, a landscape that had been so dependent upon dynastic powers for development and maintenance, was gradually turned into a historic landscape signifying the anachronism of absolute monarchy. Under new local and global conditions, the hydraulic works, palace gardens, Buddhist temples, hillside tombs, and their affiliates lost a vital connection to their political and economic foundations. They became subject to new standards of value judgment and new ideas under the influence of the West, and were overlapped, overwritten, or juxtaposed within new physical fabrics. In this context the historic landscape of the Western Hills became related to the city development of Beijing in different ways.
The concept of overlapping temporalities has been highlighted among urban historians who examine the old city of Beijing. For example, see David Strand, *Rickshaw Beijing: City People and Politics in the 1920s* (Berkeley: University of California Press, 1989), 7. Strand correlates the “physical ambiguities” of Beijing in the 1920s with the “incomplete social transformations of the Republican period.” See also Madeleine Yue Dong, *Republican Beijing: The City and Its Histories* (Berkeley: University of California Press, 2003), 9. Dong uses the notion of “complex overlap of temporalities” to call attention to the layers of history in Republican Beijing. However, these studies rarely go beyond the confines of the city walls.


This concept is put forward by Françoise Choay in her book *The Invention of the Historic Monument*, translated by Lauren M. O’Connell (New York: Cambridge University Press, 2001), 140-142.

For the exact dates of inscription, please see the official website of Beijing Municipal Administration of Cultural Heritage: [Http://english.bjww.gov.cn](http://english.bjww.gov.cn).


About the ponds and swamps on the lowlands east to the Taihang Mountains, see also Wang Huichang 王会昌, “Yiwan nian lai Baiyang Dian de kuozhang yu shousuo” 一万年来白洋淀的扩张与收缩 [Expansion and contraction of the Baiyangdian Lake since 10,000 years ago], *Geographical Research* 2/3 (September, 1983): 8-18.


See Cao Zixi 曹子西 ed., *Beijing tongshi* 北京通史 [Comprehensive history of Beijing], Volume 7 (Beijing: China Bookstore, 1994), 372-389. See also Lilliam M. Li
and Alison Jean Dray-Novey, “Guarding Beijing’s food security in the Qing Dynasty: state, market, and police,” *Journal of Asian Studies* 58 (4): 992-1032.

76 Ye Nan and Cui Qi, “Da yunhe Beijing duan yichan baohu guihua.” Although the historical evidences about the pre-Yuan Grand Canal in Beijing are limited, historians like Hou Renzhi have provided some explanations based on textual research.


79 Wang Nai liang 王乃梁, “Beijing Xi Shan shanqian pingyuan yongding he gu hedao qianyi, bianxing ji qi he quanxinshi gouzao yundong de guanxi” 北京西山山前平原永定河古河道迁移、变形及其和全新世构造运动的关系 [The relations between the Yongding River’s course change and the Holocene Tectonic Movement on the flatlands in front of Beijing’s Western Hills], *Wang Nai liang Wenji*, 王乃梁文集 [Anthology of Wang Nai liang] (Beijing: Academy Press, 2006), 327-333.


81 Hou and Deng, *Beijing cheng de qiyuan yu bianqian*.


85 See, for example, Chen Jian 陈坚, “‘Wu qing you xing’ yu ‘Wu qing shuo fa’: Zhongguo fojiao shanlin hua de foxue yiju” "无情有性" 与"无情说法": 中国佛教山林化的佛学依据 ["The ruthlessness also having Buddha-nature" and “the ruthlessness could also spread the Buddha Dharma:” the doctrinal foundation of the Chinese Buddhism’s migration to the mountains and forests], *Wen shi zhe* 文史哲 [Journal of literature, history and philosophy] 6 (2009): 49-56. See also Zhou, *Zhongguo gudian yuanlin shi*, 20-24, 33-36.


87 Cao, *Beijing tongshi*. The information about Buddhist development in imperial Beijing is scattered through the volumes and sections.


For the detailed information about the prince tombs of the Qing Dynasty, see Feng Qili 冯其利 and Zhou Sha 周莎, Chongfang Qingdai wangye mu 重访清代王爷墓 [Revisiting the princess tombs of the Qing Dynasty] (Beijing: Beijing Yanshan Press, 2007). For that of the royal concubine tombs of the Ming Dynasty, see An Zhiming 安志敏, “Beijing xijiao Dongsi mu cun Ming mu fajue Ji—di yi hao mu” 北京西郊董四墓村明墓发掘记——第一号墓 [A Record of the excavation of the Ming tombs at the Dongsimu Village in Beijing’s west suburb—No.1 Tomb], Kexue tongbao 科学通报 [Chinese Science Bulletin] 12 (1951): 1250-1255.

For the detailed information about the Jin royal tombs in Beijing, see Beijing shi wenwu yanjiu suo 北京市文物研究所, Beijing Jindai huangling 北京金代皇陵 [Jin-Dynasty imperial mausoleum in Beijing] (Beijing: Wenwu Publishing House, 2006). The information about the other tombs can be found in various local chronicles. See, for example, Zhang and Yan, Jing xi ming mu, 1-70.

See Pan Guxi 潘谷西, Zhongguo jianzhu Shi 中国建筑史 [A history of Chinese architecture], 6th edition (Beijing: China Architecture and Construction Press, 2009), 137-151. According to Pan, hillside burial was actually a custom that occurred relatively late in the history of China. Two earlier ways of burying a deceased person were both on flatlands: one was to dig a hole in the ground and place a wood or stone coffin into it; and the other was to heap up a pyramidal mound above ground with rooms and passages in it. First seen in the Dawenkou site of the Neolithic age, the former has been the major burial form for most Chinese until the twentieth century. The latter became popular no later than the eighth century BCE and was
then chosen by most emperors of the Qin, Han, and North Song dynasties for their exclusive use.

95 Wang Qiheng 王其亨, “Qingdai lingqin Fengshui: lingqin jianzhu sheji yuanlin ji yishu chengjiu gouchen” 清代陵寝风水：陵寝建筑设计原理及艺术成就钩沉 [The exploration of Feng Shui of the royal tombs of the Qing Dynasty], in Fengshui lilun yanjiu 风水理论研究 [Research of Fengshui theory], 2nd edition, ed. Wang Qiheng 王其亨 (Tianjin: Tianjin University Press, 2005), 143-181.

96 Feng Qili 冯其利, Qingdai wangye fen 清代王爷坟 [The prince tombs of the Qing Dynasty] (Beijing: The Forbidden City Press, 1996), 247-253.


98 For example, there is a stone tablet standing south of the Xiang Shan Park (the Fragrant Hill), which was erected by the Qing emperors to forbid grazing and lumbering there, see Beijing shi difang zhi bianzuan weiyuan hui 北京市地方志编纂委员会, Beijing zhi • nongye juan • linye zhi 北京志•农业卷•林业志 [Chronicle of Beijing • volume of agriculture • forestry] (Beijing: Beijing Press, 2003), 317-318.

3. City Planning: Urban Visions of a Historic Mountain

This chapter examines the relationship of Beijing with its Western Hills by focusing on changing ideas of city planning. The primary source of evidence that forms the core of this chapter is a series of fourteen master planning documents issued by the successive municipal governments from 1933 to 2004. As the written and graphic products of the planning activities of their periods, these documents provide a compelling centerpiece for analysis. Their authors, who were both political elites and technocrats, had access to relevant information unavailable to others, and they usually possessed power and economic capital to directly engage in the process of implementation. Thus the fourteen documents provide a lens through which we can discern how the influential upper classes evaluated the relevance of Beijing's Western Hills for the city development in the past century. A large part of this chapter is based on the detailed analysis of these documents, their aims, their principles, their structures, and their techniques.

Because the introduction of modern city planning to Beijing was closely related to the emergence of the municipality, the analysis of legal documents concerning the Local Autonomy Movement in China is placed at the beginning of the chapter to set the context for the latter discussions. Modern city planning in China could not have been possible without the emergence of the municipality as a government unit in the first quarter of the twentieth century. The separation between city and country was a new phenomenon in twentieth-century China. For thousands of years before this, cities in traditional China had served mainly as political and military nuclei for controlling adjacent towns and villages. They had no clearly designated suburbs, because the whole region beyond the
city was subordinate to the city. It was not until the Local Autonomy Movement of the early twentieth century that Chinese cities were gradually separated from their subordinate agrarian counties. During this movement, cities identified which resources and lands were indispensable to their future prosperity, delineated their suburbs, and turned to industrial and commercial developments. The autonomy of cities subsequently resulted in the emergence of the municipality and then the introduction of modern city planning theories to China. Because this process established the context in which the Western Hills appeared for the first time in history in the master plans for Beijing City as “suburb,” rather than “rural,” I believe an examination of the relevant legal documents will shed new light on the city-mountain relations.

As source materials, I also refer to the other primary and secondary sources concerning the city development of Beijing, such as the citizen proposals and the government correspondence or discussions. In total, this chapter is primarily about the development of ideas about urbanism and the urban-rural relationship.

**To Be a Suburb of the Municipality (1908~1928)**

Undoubtedly, the Western Hills, merely twelve miles away from the Forbidden City of downtown Beijing, has historically been dependent on the city beyond for development. But this is not to say that the area has always in the suburb of Beijing. Because the institution of municipality didn’t exist in China until the early twentieth century, there was no such category as “suburb” that defined the Western Hills. In fact, the Western Hills had been legally under direct administration of the Wanping County (宛平县) from the eleventh century to the beginning of the twentieth century. The
establishment of the county as an elementary administrative division in China derives from the third century B.C. When the First Emperor of Qin (259 B.C.–210 B.C.) united the whole country in 211 B.C., he divided it into roughly one thousand counties, and then assigned thirty-six governors to work as intermediaries between the central government and counties. Each governor usually supervised approximately thirty counties that clustered together within a region. Thereafter, no matter how dramatically those intermediaries between counties and central government might change, the county remained the fundamental administrative division of the country. Before the emergence of the municipality and suburb, the city, town and village were all integral parts of the county.

In imperial China, three typical types of human settlement—politico-military city, market-based town, and agrarian village—were administered under their affiliated counties. Politico-military cities were usually walled with ramparts and moats for defense, serving as seats of county authorities. Those of regional or national importance might also serve to accommodate intermediaries above counties or even dynastic courts, but they still relied upon county authorities to directly take care of routine matters such as tax collecting and jurisdiction. In this sense, the walled city was not an independent administrative area itself; instead it was just an integral part of its affiliated county like towns and villages. Resources such as land, water and forests that were outside a city, no matter how nearby, could not be regarded as a part of that city per se.

Within this geo-political context, the city of Beijing was actually under the direct administration of two counties from the eleventh century to the early twentieth century when it also served as the dynastic capital. The boundary between Wanping County at
west side and the Daxing County (大兴县)—called the Xijin County (析津县) during the Liao Dynasty—at east side ran north-south through the center of the city (Figure 3. 1). The officials of both counties resided within the city walls. In this way, the city as well as its affinities was divided into two administrative areas for a balance of power.\(^{102}\)

Although royal courts and intermediate authorities also resided in the City, the officials of the two counties together ran most daily affairs.\(^{103}\) Thus, during this period of time, the Western Hills in fact belonged to Wanping County.

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**Figure 3. 1 The administrative division of Beijing City around 1908 (by author)**
Of course, the administrative power of county officials was largely curtailed due to the co-existence of higher authorities. Qing Dynasty is an example. Dray-Novey has noted that there was another high official called the Captain-General of Gendarmerie who was directly responsible for defending the capital city against outside attack. He supervised two military forces:

The Inner City was policed mainly by the Gendarmerie Division and the Outer City mainly by the Five Battalions. The latter force also was the most prominent one in the immediate environs of the city, within a few miles of the city wall...while an imperial procession remained inside the city wall, it was guarded principally by the Gendarmerie Division; once it passed outside the wall, the Five Battalions became the main protective force.104

Dray-Novey’s article details how the Gendarmerie Division was also responsible for census investigation and record keeping within the city wall, but she does not talk much about the Five Battalions outside.105

The study by folklorists Chang Lin (常林) and Bai Hequn (白鹤群) describes how the Five Battalions were stationed around three locations: the Yuanmingyuan Palace, the Fragrant Hill (香山) at the east foot of the Western Hills where the Jingyi Palace located, and the Firearm Camp. According to them, the Five Battalions were basically concentrated in a limited area between the City and the Western Hills. Such observation is shared among a group of Chinese scholars.106 But the historic geographer Han Guanghui (韩光辉) states that the confines of the Battalions actually extended for about 640 square kilometers outside the city walls, encompassing the whole Western Hills.107 This is supported by an archival file I found at Beijing Municipal Archive, which includes a list of the camps of the Five Battalions. Some of the maps specifically show how the Western Hills was guarded.108
In either case, the Gendarmerie Division and the Five Battalions could not be regarded as an administrative division. While the Captain-General mainly focused on security issues, a majority of routines were still waiting for the two counties authorities to administer, especially in the area outside the city walls. Furthermore, neither the Captain-General of Gendarmerie nor the county authorities merely supervised the city; both took charge of towns and villages simultaneously within the city environs. In this sense, the Western Hills could not be seen as a suburb of the city, because the city was still confined within the walls and didn’t stand independently from the counties.109

However, the relationship of the Western Hills and Beijing City began to change in 1908. That year witnessed the announcement of a nine-year program toward constitutional monarchy by the dynastic court. The program focused on local autonomy, allowing people to elect officials at the county level, while keeping untouched the emperor’s rights to appoint and remove officials above that level. The program was clearly an expedient measure to defuse the increasing threat of democratic revolution rather than a complete embrace of democracy, and it failed to avoid the dynasty from collapse three years later. However, this program more or less started a process in which municipality gradually emerged.

The first stage started soon after the announcement of the nine-year program. The court issued a series of relevant statutes in 1908 and 1909, according to which local autonomy would be divided into two levels. The lower level included three types of settlement that were all subordinate to county: 1) cheng (城), literally meaning a walled city by ramparts and moats that serves as the seat of a government at different level; (2) zhen (镇), referring to a guarded town of more than fifty thousand population; and (3)
xiang (乡), meaning a rural village of less than fifty thousand population. At this level, local residents were allowed to elect respective executive boards, which were responsible for issues including education, public health, industry, infrastructure, and welfare. But, at the higher levels that included county and intermediaries, people could merely elect councilmen, while the emperor appointed government officials.\textsuperscript{110} Albeit politically self-contradictory, this system is critically important in that it clearly reveals the status of city in imperial China. It deserves attention also because it was the first time in Chinese history that the city was separated from the countryside, although it was still subordinate to its county.

The court also issued two local statutes that were specifically intended to establish a Capital Autonomous District, which included the city of Beijing and its immediate environs that were then guarded by the Five Battalions. This district was subdivided into a series of autonomous boroughs with democratically elected representatives who served as councilmen and executive directors of boards. The responsibilities of the council and board involved a wide range of issues ranging from education to infrastructure.\textsuperscript{111} Although the two statutes were not fully carried out due to the subsequent political instability, they marked a turning point in Beijing's history: when the rest of Chinese cities were still subordinate to their counties, the city of Beijing together with its dependencies achieved a similar or even higher status as a county. Assuming that the statues were fully carried out (which we don't exactly know), then the chairman of the board would have been the first mayor of Beijing in the modern sense.

The second stage began in 1913 when Yuan Shikai (袁世凯, 1859~1916) became the first President of the Republic. As a military oligarch, Yuan first dissolved all the
previous autonomous associations and county councils, which he saw as uncontrollable threats to his dictatorship. Half a year later, he resumed the process, issuing a series of new statutes. Yuan confined the autonomy to levels below county, organizing city, town or village into autonomous borough in an undistinguished way. The status of the city of Beijing returned to what it was before 1908, serving as the seat of two county governments, the seat of an intermediary government for both these two counties and the other twenty adjacent ones, and the seat of the central government. What was different was the separation of the intermediary government from Zhili Province to which it had previously belonged. Although this period witnessed the emergence of the Capital Municipal Office and the Capital Police Department in Beijing, the two institutions together could not be regarded as an administrative division. They mostly took care of the city within the wall, making sanitary, transportation and recreational improvements in an unsystematic way. The environs outside the wall, including the Western Hills, were well beyond their reaches. Yuan’s vision reveals that China was then still an agricultural country, in which the importance of city and town were politico-military rather than economic or industrial. As in the past, Yuan’s policies were not carried out after his death in 1916, which led to years of warfare among warlords.

The third stage lasted ten years and spanned from Yuan’s death to the national reunification in 1928. Due to the continuous conflicts among various sectarian powers, the government leaders changed frequently and could not function effectively. But there were some fundamental and important changes in this period. From 1919 to 1922, President Xu Shichang (徐世昌, 1855~1939) resumed the process of local autonomy and issued a number of key laws and statues. In these documents, walled city and guarded
town were termed together as *shi* (市), literally meaning "marketplace" in Chinese. While *shi* was required to have a population more ten thousand, the less populous settlements were termed as *xiang* (乡), literally meaning "rural place." For convenience, I will simply call them city and countryside. The city was further subdivided into two types: Special City that was subordinate to province, and Normal City that was subordinate to county. All cities could elect their own mayors as chief executive officers. The city of Beijing was nominated as Capital Special City in 1922, enjoying a status equal to that of a province due to its particularity.\textsuperscript{115}

Two observations can be made here. On the one hand, this emphasis on urban as opposed to rural settlements was unprecedented. In addition to the city of Beijing as the national capital, a large number of populous cities similarly rose to an equal status to counties. On the other hand, the role of city and town was no longer understood as purely politico-military. China turned to stress economic-commercial functions of the urban for the first time in history after thousand years of agricultural development.

However, we must recognize that the three stages mentioned above are better viewed as an intellectual rather than a real process, because almost all the documents issued from 1908 to 1927 failed to be fully operative.\textsuperscript{116} It was not until 1928 that a few Chinese cities achieved complete independence from their counties or even provinces. This was the time when the KMT Party, under the lead of Chiang Kai-shek (蒋介石, 1887~1975), finally reunited the country. Soon after, the KMT Government issued a set of autonomy laws and statutes, which later were revised several times. In these documents, the increasingly rising status of city deserves attention: no city was part of a county any more. There were two types of city: the city that was directly subordinate to
the central government, including the national capital or those with a population exceeding one million; and the city that reported to its province, including those with a population from two hundred thousand to one million. The mayor was appointed by the central government and the democratically elected councilmen, and these worked together to deal with local affairs in twenty-four areas, including education, public finance, land, economic development, welfare, infrastructure, census, police, and so on.117

Although the mayor wasn't yet elected, the separation of city from countryside was complete by about 1930. The new emphasis on municipality brought fundamental changes to the county-based system that had been operative in China since 221 B.C. Municipal administration replaced county authority as the chief officer for city. They were empowered to experiment with new visions for city development that were totally different from that of agriculture-based countryside. More importantly, the government policies were put into operation this time, and a number of municipalities were established nationwide. Among them, the city of Beijing became the fourth city that directly reported to the central government in mid-1928, taking the area previously guarded by the Five Battalions as its suburbs (Figure 3.2). The county authorities soon moved out of the city to their remaining territories, and all the other higher authorities were abolished.118 In this way the Western Hills was officially incorporated into the city of Beijing as a suburb, with the municipal government as its new manager. In the years that followed, the municipal boundary kept changing until 1958 when the city was eventually extended to encompass seventeen districts and counties, and the Western Hills remained within the confine of the urban development all the time (Figure 3.3).
Figure 3.2 The administrative division of Beijing City in 1947. By author, based on Hou Renzhi, *Beijing lishi dili tuji* 北京历史地理图集 [Atlas of Beijing historic geography] (Beijing: Beijing Press, 1987), 64.
Figure 3.3 The administrative division of Beijing City in 1958, with the old city wall already demolished. By author, based on Beijing shi minzheng ju 北京市民政局 and Beijing shi cehui sheji yanjiu yuan 北京市测绘设计研究院, *Beijing shi xingzheng quhua tuzhi (1949 nian -2006 nian)* 北京市行政区划图志 (1949年-2006年) [Atlas of Beijing’s administrative divisions from 1949 to 2006] (Beijing: China Travel & Tourism Press), 27.

Thus far, we have seen how the four stages of local autonomy developed in China, how the municipality emerged, and more specifically how the Western Hills became a suburb of the city of Beijing. These changes occurred at the same time that Western city
planning theories were introduced to China and also that formal urban planning was first implemented. According to Wang Yanan (王亚男), it was in the 1920s that a group of intellectuals, who had studied oversea and gained enthusiasm for translating and writing about Western municipal theories, initiated the so-called Municipal Reform Movement. For example, in 1923 Chen Liangshi translated an American book titled *Municipal Government and Administration*, written by William Bennett Munro (1875-1957), a Canadian-born scholar of municipal government who had taught at Harvard and the California Institute of Technology. Others wrote their own books, including Dong Xiujia (董修甲)’s *Shizheng xinlun* (市政新论) in 1924, Zhang Weici (张慰慈)’s *Shizheng zhidu* (市政制度) in 1925, Zheng Zhaojing (郑肇经)’s *Chengshi jihua xue gailun* (城市计划学概论), to name only a few. More specifically, the theory of the “Garden City” was introduced to China in the 1920s and favored by social activists who supported both the pattern of low-density, green urban development and the idea of public land ownership. Noticeably, this proliferation of publication coincided with the third and fourth stage of local autonomy in China. While the former witnessed the independence of some cities from their counties for the first time, the latter saw the establishment of the first few municipalities. This indicates that the introduction of city planning theories had an intimate relationship with the emergence of municipality.

Secondly, the post-1928 period witnessed the unprecedented emergence of modern planning efforts in some Chinese cities like Shanghai City and Nanjing City. The city of Beijing didn’t make any such efforts until the late 1920s, and the fact that it only did so in conjunction with the emergence of the municipality underscored the close relation between city planning and municipality. Arguably, there was simply no true
municipality prior to 1928 because no city planning efforts occurred during the period. This conjunction of municipality and city planning established a new context in which the relationship of the Western Hills to the city of Beijing was destined to change. Ever since the establishment of municipality in 1928, the successive municipal administrations have made fourteen planning efforts in total for the city of Beijing (Table 3.1). Because the Western Hills then was already a suburb of the city, it began to appear in these urban visions in various ways. Thus the fourteen plans provide a lens through which the relevance of the Western Hills to post-1928 Beijing City can be discerned.

<table>
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<tr>
<td>KMT government</td>
<td>Beijing shi quyu huading cao’an 北平市区域划定草案 [Draft plan for delineating Beijing City’s administrative Division]</td>
<td>1928</td>
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<tr>
<td>KMT government</td>
<td>Shizheng chuqi jianshe jihua 市政初期建设计划 [Municipal initial development plan]</td>
<td>1933</td>
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<td>Japan</td>
<td>Beijing dushi jianshe jihua yao’an 北京都市建设计划要案 [City construction plan for Beijing]</td>
<td>1938</td>
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<tr>
<td>KMT government</td>
<td>Beijing shi xin shijie cao’an 北平市新市界草案 [New draft plan for delineating Beijing City's administrative Division]</td>
<td>1946</td>
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<td>Beijing xin dushi diyi qi jihua dagang 北平新都市第一期计划大纲 [Outline of planning for new Beijing City (1st phase)]</td>
<td>1947</td>
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<td>Communist government</td>
<td>Shoudu jianshe fazhan jihua cao’an 首都建设发展计划草案 [Draft Plan for constructing and developing the capital]</td>
<td>1950</td>
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<td>(Socialist experiement)</td>
<td>Beijing jianshe guihua jia, yi fang’an 北京建设规划甲、乙方案 [Construction plan for Beijing (Scheme A &amp; B)]</td>
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<td>Gaijian ya kuojian Beijing shi guihua cao’an 改建与扩建北京市规划草案 [Draft plan for reconstructing and expanding Beijing City]</td>
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<td>Beijing chengshi jianshe zongti guihua chubu fang’an 北京城市建设总体规划初步方案 [Preliminary Scheme of master planning for Beijing City construction]</td>
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<td>Beijing shi zongti guihua 北京市总体规划 [Master plan for Beijing City]</td>
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<td>Beijing shi zongti guihua xiangai gao 北京市总体规划修改稿 [Revised master plan for Beijing City]</td>
<td>1973</td>
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<td>Communist government</td>
<td>Beijing chengshi jianshe zongti guihua fang’an 北京城市建设总体规划方案 [Master planning scheme for constructing Beijing City]</td>
<td>1982</td>
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Cultural Tourism and City Beautification (1928-1937)

During the period between 1928 and 1937, the Beijing Municipal Government was faced with two key challenges. One was to draw a demarcation line between the city and the adjacent counties, which the central government had not explicitly stipulated from the start. In 1928 what was under actual control of the city was merely the limited area formerly guarded by the Gendarmerie Division and the Five Battalions. Many strategic resources were located beyond that and within the confines of the counties. The other challenge was to find a new development strategy for Beijing that differed from the previous politico-military and agriculture-based one. This became especially imperative after the central government moved to the southern part of the country in 1927. As a national capital for several centuries, Beijing's economy had prospered mostly by providing service to the bureaucrats and their military supporters while lacking productive sectors like industry. Thus the loss of capital status led directly to a severe economic depression around 1930.\textsuperscript{122} In fact, the two challenges were intertwined, pointing to one single question: what kind of municipal visions would be most suitable for Beijing?

After a month of discussion, the first municipal administration under Mayor He Qigong (1899-1955) submitted an ambitious land-demarcation plan to the central government on September 10, 1928, proposing an expansion of the area that was then under control. The municipal administration argued that if Beijing wanted to revive prosperity, it had to advocate culture, reorganize industrial production, and improve agriculture.\textsuperscript{123} Noticeably, culture was placed ahead of the other two as the primary development strategy, which was unusual for an agriculture-based country. But what
precisely did “culture” refer to then? Among the seven places that the plan proposed to acquire from the adjacent counties, most were railway hubs, water supply sources, coalfields, and arable lands. Only one place seemed relevant to culture: the Xiaotangshan Hill (小汤山), a resort eighteen miles north of the Forbidden City that the municipal administration described as a place of interest that attracted numerous tourists, featuring abundant hot springs as well as imperial palace relics. It was topographically and functionally linked to the imperial palace gardens of the Western Hills and boasted a well-developed road leading to downtown Beijing. Thus it would be economically beneficial to the city if the Xiaotangshan Hill could be managed together with the Western Hills. In this sense, “culture” here referred to heritage landscapes that featured both historic and scenic attractions, whose tourist value legitimated culture on the basis of economic utility.

Besides cultural tourism, the plan also justified the acquisition of the Xiaotangshan Hill in terms of “garden city.” It pointed out the old city within the walls, with its tons of imperial buildings under preservation, will be impossible to be completely renovated to accommodate future development. If the Western Hills and the Xiaotangshan Hill could be managed holistically, then the vast northwest suburb of the city would be scenically ideal for building a “garden city,” which was exactly what all modern metropolises around the world favored to avoid urban noise. However, this vision of “garden city” was not as same as that of Ebenezer Howard (1850-1928). It lacked Howard’s social agendas like community ownership of land, being independent of metropolis, self-sufficient in jobs, and also the physical characteristics of his model like the greenbelt. What remained was the vision of suburban living in a bucolic leafy
setting away from the city. Therefore the value of the Western Hills to the city here was mainly visual.

The relationship among historic landscape, culture and aesthetics reveals the relevance of the Western Hills (and similar places) to the city of Beijing in two fundamental ways. First, historic landscapes could contribute to the urban economy with tourist revenues. Second, they would help to beautify the urban environment in a scenic way. For the first time in history, sites like the Western Hills no longer merely served as realms of religious worship, elitist recreation, or scattered farming, but became instrumentalized as resources to enhance urban capital accumulation and suburban development. This vision accords with George Yúdice’s idea of “expediency of culture”:

The role of culture has expanded in an unprecedented way into the political and economic at the same time that conventional notions of culture have been emptied out…Culture no longer serves as a realm of legitimation, but must itself be legitimated on the basis of its explicit political and economic utility.\(^{127}\)

Based on an examination of the Cold War, globalization, and the New Liberalism Movement, Yúdice’s observation insightfully points out two major utilities of cultural heritage, both of which can be seen in post-1928 Beijing. More importantly, Yúdice also discerns a precondition for culture to fulfill these utilities, that is, its death. At this point, David Lowenthal provides the most eloquent explanation concerning the relationship between heritage and past. He argues that the reason why people preserve cultural relics is because they are "no longer intimate enough with that legacy to rework it creatively."\(^{128}\) Therefore, heritage is not “an inquiry into the past, but a celebration of it…a profession of faith in a past tailored to present-day purposes.”\(^{129}\) If such unfamiliarity traces back to the Renaissance, the French Revolution, or the
Industrialization in the West, then it also happened in China at the beginning of the past century when modernity emerged. This is the context in which the Western Hills was increasingly integrated into Beijing city through cultural tourism.

Five years later, a second round of city planning for Beijing further strengthened the relationship among heritage landscape, culture and suburban development. In 1933, Yuan Liang (袁良, 1882-1952) became the new mayor for the city. Educated at Waseda University of Japan, Yuan was enthusiastic about experimenting with new municipal theories from around the world. Compared to his predecessors, his initial vision was much more comprehensive, covering eight major subjects, namely education, finance, land, public utility, police, public health, public work, and society. For each subject, he listed a number of examples, which were later discussed among both department officials and specialists.\textsuperscript{130}

But before long Yuan turned to focus on the single project of turning Beijing into a world-class sightseeing city. According to the new mayor, although manufacturing and agricultural sectors were of fundamental significance to reboot the urban economy, it was actually much easier and quicker to make money through tourism. He illustrated this point with comparisons to France, the U.S. and Japan, arguing that even these industrialized countries relied on tourism to generate much of their revenues and that there was therefore no reason for Beijing not to exploit its abundant tourist resources like palace gardens.\textsuperscript{131} Moreover, the administration argued, because these resources were mainly the historical remains of a 500-year-old dynastic capital, the sightseeing district was in nature an oriental cultural center. Among all the Chinese cities, Beijing was the most qualified to be a world-class tourist destination and would moreover attract
international attention, which could make Japan hesitate before invading North China.\textsuperscript{132}

Compared with the 1928 plan, the 1933 plan reveals a further rise of cultural tourism as a major strategy for spurring the economic growth of Beijing. The role of culture was expanded into the political realm. Although it did not ultimately prevent the War, this argument revealed the perception of a new utility of cultural tourism for post-1928 Beijing and China.

Soon after, a series of specific plans were drawn up for the Beijing Sightseeing District: 1) site renovation; 2) road construction; 3) canal and and ditch maintenance; 4) street tree planting; 5) tourist reception, and 6) administration. In these plans, the walled city and the Western Hills were designated to receive the most investment. For example, the plans proposed to dredge the springs and waterways that originated from the Western Hills and ran through the city, increasing water supply and maintaining the waterfront scenery. Of the total renovation expenses that the plans intended to spend on the scenic and historic sites, those in the Western Hills accounted for 22.7%, which was to be used for preserving the historic buildings in disrepair, building the mountain trails, and improving scenery. Additionally, the plans also proposed to afforest the whole Western Hills and asphalt five suburban roads that linked the city and the major tourist sites in the Western Hills.\textsuperscript{133} These proposals, along with others, were partially realized from 1933 onward until Japanese armies took over the city in 1937. For instance, during this period, thirty-nine renovation projects were carried out to rescue some major historic monuments. While thirty-five of these projects were within the city walls, three out of the remaining four suburban ones were located in the Western Hills.\textsuperscript{134}
Through the improvements in historic preservation, forestation, hydraulics and transportation, the Beijing municipal government of the 1930s worked on the integration of the Western Hills and the city into a landscape unit to increase Beijing's attractiveness to tourists. In fact, the popularity of cultural tourism can also be discerned in a body of citizen proposals that emerged during the same period. For example, in Zhu Hui’s proposal to Beijing Municipal Government in 1928, the increase in revenue through tourism was among three key strategies for reviving the city; the other two were manufacturing improvement and population increase. He advocated for the renovation of the historic and scenic sites both inside and outside the city walls, in which those in the Western Hills—the Summer Palace, the Fragrant Hill, and the Hot Spring (Wenquan)—were specially mentioned. He also proposed to enhance transportation accessibility and cut out middlemen.  

Similarly, in Bai Dunyong’s 1929 article, historic and scenic resources were emphasized as Beijing’s core competence. Although he didn’t think cultural tourism alone would be able to feed a population of 1.2 million, Bai still insisted that historic preservation was indispensible to Beijing’s economic prosperity.  

Apparently, what these citizens really cared about was not culture itself but rather the utility of culture. Such attitude was no different from that of the municipal government officials we have seen before.

Noticeably, when the municipal officers and citizens advocated cultural tourism as an economic strategy, they often justified the arguments by referring to the tourist development in other countries. For example, the 1933 plan mentioned that Japan had established sightseeing districts to attract foreign tourists, and it also promoted tourism by allocating a huge amount of money for publicity. Similarly France paid great attention to
tourist publicity and relied on tourist revenue for 28% of its annual foreign trade income.\textsuperscript{137} In a proposal submitted to the municipal government by Beijing Merchants Guild on 1 November 1946, the proposal for establishing a cultural and scenic tourist district in Beijing was legitimized by illustrating six renowned tourist attractions worldwide, including the scenery of Switzerland, Niagara Falls of U.S., the historic buildings of Italy, the oil painting galleries in Paris, Mt. Fuji of Japan, and the Water Palace of Java.\textsuperscript{138} This reveals that, as early as the first half of the twentieth century, people in Beijing were highly aware of the global trend towards instrumentalization of heritage resources for urban economic development.

If the 1933 plan is juxtaposed with the citizen proposals and the 1928 plan, a general view of the relevance of the Western Hills to the city of Beijing during the period between 1928 and 1937 emerges. Undoubtedly, cultural tourism was the most important link between the hills and the city. As Yúdice and Lowenthal have seen in the West, cultural tourism was also intertwined with economic and political issues in post-1928 Beijing. But, unlike purely human-made cultural heritage, the Western Hills was also linked to the city by environmental considerations. In the 1928 plan and the 1933 plan, issues like hydraulics and forestation added another dimension to the relationship between the city and the hills: nature. Therefore, in total, this period witnessed two aspects of relevance of the Western Hills to Beijing City: capital accumulation and city beautification. The three interacted with each other under changing conditions in the following periods.
The Inconvenience of Culture (1937-1945)

On July 1937, Beijing fell to Japan, marking the beginning of the Second Sino-Japanese War. Soon after, Japan took control of North China, and established a puppet regime with Beijing as its capital, a regime that lasted over eight years until Japan surrendered in 1945.139 During this period, Japanese Armies saw city construction as a key to turn the occupied territories into their permanent bases, which could provide continuous supplies to support warfare. Therefore, they immediately drew up the city master plans for eight major cities of North China based on an exhaustive investigation, which were subsequently implemented one after another.140 Two Japanese planners—Yamazaki Guchi and Misaki Sato Juku—put forward the plan in early 1938 as well as a series of supplementary statutes and special plans thereafter.141

In the 1938 plan, Beijing was seen primarily as a politico-military city, but it was also regarded as a sightseeing city with an abundance of historic-scenic sites. The plan proposed an administrative division that encompassed not only places like the railway hub, water sources, coal sources, industrial areas, and airports, but also heritage landscapes. As with previous plans, the 1938 plan argued that the Xiaotangshan Hill and the Western Hills had to be managed together, because the former was so close to a villa area that was to be built at the foot of the latter.142 Different from their Chinese predecessors, the Japanese planners did not mention “culture” at all, designating the Western Hills and the Xiaotangshan Hill only as sites of leisure for local urbanites. There are no explicit words in the Japanese plan about the economic value of this “sightseeing city.” This indifference to cultural tourism is a reminder of the abnormal conditions that Beijing suffered at the time.
A most impressive aspect of the 1938 plan was a regional model of metropolitan structure: a core city ringed by a greenbelt and surrounded by satellite towns linked by a radial and loop system of transportation. The Japanese planners proposed to build three new satellite cities outside the city wall: 1) the West Suburb New City, an nonindustrial district for administrative, commercial, and residential uses; 2) the East Suburb New City, a purely industrial district; and 3) Tongxian County Industrial District. The three new cities and the old city were connected by an efficient transit system. First, a railway ran through the old and the new cities from east to west, while connecting to the other existing railways in the region. Second, the plan proposed to build three loop roads outside and around the city wall, which were supplemented by the radial roads that originated from the thirteen major gates of the old city. In this way, an integrated network of regional transportation was established. Furthermore, the plan designated an extensive greenbelt around the old city, which extended one to three kilometers away from the wall. This greenbelt was to control the future urban sprawl of the old city and prevent it from encroaching on the suburbs in a disorderly way. At first glance, the core-satellite model that the Japanese planners adopted in 1938 was good for dispersing population, preserving the old city, and preventing urban sprawl. But viewed critically, it is possible that the Japanese planners also wanted to avoid the troublesome renovation of the old city where the Chinese population was concentrated. With the investment being spent on the new cities, the old city was in danger of decline.

Based upon this model, a rational and comprehensive system of land use zoning was applied. The plan designated three basic types of land use zones, including Residential Zones (further distinguishing between high-end and ordinary), Commercial
Zones, and Industrial Zones. These types were allowed to mix with each other to form Mixed Zones. Meanwhile, it also designated three types of special zones that could be overlaid onto the three basic land use zones: Green Areas, Scenic Areas, and Beautiful City Areas. These special zones were required to avoid urbanization. In this rigid zoning system, the Western Hills as a whole was noticeably designated as both a green area and a scenic area, but it was not preserved completely untouched. In fact, the Japanese planners wanted this area to be developed with new suburban villas allowed in some designated areas of the plain at the east foot of the Western Hills; and on the hilly lands, new parks, playgrounds, golf courses, and memorials were permitted. The planners also proposed to build sightseeing roads to connect the tourist sites in the area to each other and to the city. In this respect, the zoning system was actually designed to balance protection and development.

Moreover, the specific planning of the West Suburb New City also deserves attention. This new city was planned to occupy an area of 65 square kilometers, in which 35 square kilometers were required to be green. The city center was a grand plaza (1.8 square kilometers), which was deliberately located at the intersection of the east-west axis originating from the Forbidden City and the north-south one originating from the Foxiangge Pavilion (佛香阁) of the Summer Palace. While the area north of the grand plaza was reserved for military uses like the airbase, the area to the south became the focus of urban development. This southern civic part centered on a new Central Railway Station that located 2.6 kilometers due south of the grand plaza, which provided direct transit to the old city center and the other two new cities. A grand boulevard was planned to connect the plaza to the station, serving as a major commercial strip with stores on
both sides. Looking from a distance, the whole city was surrounded by a swathe of green, integrating the west part of the greenbelt of the old city, the Long River (长河), the Western Hills, and the vegetable fields between the new city and Fengtai (丰台) in the due south. What’s more, another smaller greenbelt ran east to west along the middle line between the northern military reserve and the southern civic area. It further integrated four existing landscape features on the urban fringe: 1) the Babaoshan Hill (八宝山) in on the west side of the city, a residual hill of the Western Hills; 2) the Shilu Aqueduct (石芦水渠) that ran through the grand plaza from west to east, transporting water from the Yongding River to the old city; 3) the South Drought River (南旱河) that converged with the Shilu Aqueduct at the grand plaza, with its water source coming from the Western Hills’ torrential floods; and 4) the Yuyuantan Lake (玉渊潭) in the northeast that stored water from both the Shilu Aqueduct and the South Drought River. This greenbelt, together with the larger ringed green, completely separated the urban areas from the suburbs. To prevent urbanization, only parks, golf courses, and playgrounds would be allowed within these special areas.145

But how did the Japanese planners come up with the ideas for zoning, the core-satellite model and the concentric urban pattern? Andre Sorensen’s historic survey, which traces the development of urban planning in Japan from the mid-nineteenth century to the end of the twentieth century, provides answers. According to Sorensen, the first zoning system of Japan was proposed in 1918 by Ikeda Hiroshi, a planner who had traveled frequently to the Western countries like Germany and UK before putting forward the system.146 Sorensen also mentions that several Japanese planners had attended the 1924 Amsterdam International City Planning Conference, where a central topic of debate was a
metropolitan model: the core city ringed by greenbelt and surrounded by satellites linked by a radial and loop rail system. This model was later adopted in Japan for recreation and air defense.\textsuperscript{147} Finally, Sorensen points out that Japanese planners were quite familiar with Howard’s garden city concept.\textsuperscript{148} The observations above reveal how modern planning ideas had traveled across national or regional borders to influence different places around the world. To a great extent, the Japanese planning experiments in Beijing were the adaptation of Western theories to the local specificities for the purposes of domination and control.

What can we conclude about the specific relevance of the Western Hills to urban Beijing in the vision of the Japanese planners? One foremost aspect of such a vision was the emphasis upon this heritage landscape’s value for local recreation, which was in sharp contrast to the previous interest in cultivating international cultural tourism. The 1938 plan never mentioned specifically those historic relics; instead, it saw the natural features of the Western Hills in terms of future parks, playgrounds, golf courses, memorials, and villas in service of local “citizens.” Furthermore, unlike the 1928 plan and the 1933 plan that focused on the historic sites that were unique to China and thus worth visiting for foreign tourists, the 1938 plan designated the entire hilly lands as Scenic Area and Green Area. Evidently the Japanese planners were interested in the natural features of the Western Hills that could be enjoyed by future urban residents--Japanese immigrants. Such alternative interest in nature is further embodied in the specific planning of the West Suburb New City. Compared to the old one, this new city was much closer to the Western Hills. Its layout of the city was carefully studied so as to make best use of certain natural features of the hills. The best example was the greenbelt that ran east to west along the
middle line of the new city, which directly took advantage of the Babaoshan Hill, the Shilu Aqueduct, the South Drought River, and the Yuyuantan Lake. Thus, the Western Hills had a great influence upon the planning of the West Suburb New City in terms of site selection, scale, layout and land use, but its influence was still recreational.

The Japanese emphasis on the recreational and natural aspects of the mountain area indicates that cultural tourism was not merely economic. It also reveals that heritage landscape was much more complicated than heritage site, because those who don’t care about a site’s historic and cultural attributes can still find value in its natural features. This is one reason why heritage landscapes are always changing with respect to the value placed on them by different communities.

**Education and Industry (1945-1949)**

At the end of the World War II, the KMT Government reestablished the Beijing Municipal Government on August 16, 1945. Although the period between the end of the war and the ouster of the KMT in 1949 was short and unstable, the municipal government struggled to make two rounds of planning for Beijing, neither of which was fully implemented. But the plans still deserve attention in that they not only integrated the previous visions of Beijing selectively, but they also added something new under the influences of the postwar thoughts on city development worldwide.

Viewed uncritically, the 1946 master plan for Beijing under the administration of Mayor Xiong Bin (熊斌, 1894-1964) looks almost the same to the 1938 plan. The similarity is evident in the proposal for the municipality administrative division, through
the core-satellite metropolitan model, to the zoning system. This can be explained by the fact that the authors of this plan—Yoshinobu Orishimo and Jgawa Masahiko—were two Japanese planners who had previously worked for the puppet regime. Soon after the war, the two were recruited by the reestablished Beijing Municipal Government to work out a new vision for Beijing according to the postwar conditions. They devised a version of the 1938 plan based on a set of similar procedures and principles, but their revisions both further developed and differed from the 1938 plan in critical ways.

A significant difference was a resurgent emphasis on the historicity of Beijing. The 1946 plan once again explicitly advocated protection of Beijing's heritage relics and landscapes, further developing a transportation network for sightseeing. This network was to consist of two high-speed railways, four tramway routes and driving routes, connecting the major tourist spots of the region to each other. The area between the Western Hills and the old city received an infrastructural investment much more than any other suburbs of the region. However, the plan does not explicitly state that this investment was for cultural tourism; rather, the relevant heritage landscapes were often referred to as for local recreation like park, zoo, arboretum, playground, villa, and spa. The enthusiasm for attracting foreign tourists, as we have seen in the 1933 plan, had vanished.

Such an ignorance of cultural tourism as a development strategy, together with the designation of the center of the West Suburb New City for administrative uses, was partly due to the uncertainty about the selection of the postwar national capital. This issue became a hot topic as early as 1944 when the victory of the Allies was sensed. The KMT Government had earlier moved the capital from Nanjing to Chongqing, but now that the
war was about to end, a new decision was needed regarding China's capital city. Beijing, Nanjing, Xi’an, Wuhan, and Changchun were the focuses of debate. While those who voted for Beijing justified their viewpoints mainly from military, political, or economic perspectives, Tan Bingxun (谭炳训, 1932-1959), the director of the Beiping Municipal Construction Bureau (北平市政府建设局), focused on city planning. Among ten considerations that ranged from transportation to resource supply, Tan specifically pointed out that Beijing boasted the most beautiful historic and scenic resources. These sites were not only spacious with respect to visitor capacity, but they also best represented the appearance and spirit of China. Tan even quoted Le Corbusier’s praise of Beijing’s layout in the 1929 book The City of To-morrow and Its Planning. It was impressive that heritage landscape here was linked to the nation so as to legitimize Beijing as capital. Unfortunately, no consensus was reached. When the National Constituent Assembly was held from November to December 1946, the issue was finally suspended and not written into the new Constitution. This uncertainty may explain why the 1946 plan focused on the accommodation of an administrative district: to compete for national capital status.

Besides, the lands previously reserved for military purposes were given over to other uses. The West Suburb New City was reduced to an area of 30 square kilometers which no longer included the part north to the grand plaza and in which the grand station replaced the grand plaza as the new center for the rest of the urban area. Then the planners moved the grand station out of the new city and designated the center of the West Suburb New City as an administrative district, claiming that this was to prepare Beijing to be the national capital in the future. But the 1946 plan maintained the previous
greenbelt (the Babaos Hill, the Shilu Aqueduct, the South Drought River, the Yuyuantan Lake, and the vegetable fields) around the new city. The Yuanmingyuan Palace Garden ruin that was also previously reserved was turned into a campus district. With a resurgent emphasis on historicity, an elaboration of sightseeing transportation network and a demilitarization of land use, the 1946 plan made fundamental changes to the relationship of the Western Hills to urban Beijing. First, the hills became again an integral part of the old capital city in terms of historic preservation, so that it was seen as something unique to Beijing rather than merely a scenic and recreational area in general sense. Second, by abandoning the northern half of the West Suburb New City that was previously reserved for military uses, the planners actually removed an inaccessible obstruction between the Western Hills and the urban areas, both old and new. In this sense, the Western Hills was actually brought even closer to the urban life of future Beijing. Lastly, the 1946 plan greatly solidified the previous thoughts on sightseeing roads, providing a detailed vision for modernizing the transportation infrastructure of the area. This effort reveals the increasing importance of heritage landscape to urban Beijing. In general, albeit mostly consistent with its precedent, the 1946 plan made a revision that catered to a different need.

However, with the resignation of Mayor Xiong Bin on July 15, 1946, the plan under his administration was suspended and reevaluated. On November 1946, just three months after He Siyuan (何思源, 1896-1982) acceded to the office of mayor, the municipal officials and a delegation from the central government held a meeting to discuss the planning issues. They clarified that Beijing could not be a political center, because the KMT Government preferred to make Nanjing its capital and had already
begun making investments toward that goal. Beijing could also not compete for industry with Tianjin, a nearby port city. Thus the meeting was unanimous in building Beijing primarily as a cultural center with the traditional appearance and the modern infrastructure. These officials and experts proposed to improve housing, green space, water supply, garbage disposal and sewing system. They also criticized the Japanese planners for separating residential and industrial zones so far apart that it impeded the daily commute, instead advocating for satellite towns that were self-contained.\textsuperscript{154}

Eight months after the meeting, the Public Works Bureau of Beijing Municipal Government came up with a new master plan for Beijing that differed from the 1946 plan in two aspects. First was the claim that Beijing would be primarily a cultural city that served tourist and educational functions. The plan advocated the establishment of a Tourist District to integrate all the historic and scenic sites in the region. These sites would be greenscaped and beautified to be public parks, around which height and appearance of new buildings were controlled. Moreover, tourism service facilities like restaurant, shopping mall and theatre would be built within the district. On the one hand, the plan proposed to establish a College Education District near Haidian Town 1.5 miles east of the Summer Palace. This selection of location was to take advantage of both the scenic beauty of the Western Hills and the existing educational infrastructures laid down by Yenching University and Tsinghua University since the 1910s.\textsuperscript{155} In this way, the notion of "culture" was expanded beyond tourism to include education for the first time and it became a central pillar for the urban development of Beijing.

The other aspect that distinguished the 1947 plan from the previous one was an emphasis on urban self-containment. Whereas the Japanese plans had separated dwelling
from work, the two were combined in the 1947 plan. First, a new education district and
industrial district were planned near the West Suburb New City so that its residents no
longer had to commute to the previous industrial zones east of the old city. Moreover,
thirteen satellite towns were planned in places like Haidian (the College Education
District), Shijingshan (a steel industry center), Fengtai (a railway hub), Tongxian (a canal
hub), and the Fragrant Hill (a upscale villa district). Because all these places could offer
jobs, they were combined with housing to become the new self-contained settlements,
which would be surrounded by greenbelts or agricultural lands and interconnected by
high-speed transportation radiating from the old city. Clearly, this model responded to
the discussions on the 1946 meeting about the absolute zoning. It might also be a
response the overcrowding of the old city by relocating communities in new settlements.

Although the 1947 plan largely coalesced from the prior master plans for Beijing,
it featured three new characteristics: 1) an expansion of cultural industry to include
education; 2) an interest in building satellite towns that combine dwelling with work and
facilitate population evacuation; and 3) an experiment to manage heritage sites by
greening, beautifying and controlling new constructions. Did these general features add
something new to the specific relationship between the Western Hills and the city of
Beijing? Undoubtedly, a most noticeable aspect was how this heritage landscape had
attracted the education institutions and even industrial factories to be built in the vicinity.
The Western Hills provided the former with scenic beauty and fresh air, supporting the
latter with the water of the Yongding River and the coalmine of the Taihang Mountains.
Both emerged at the foot of the Western Hills spontaneously as early as the 1910s, but it
was not until 1947 that the two spots appeared in the official planning texts as a College
Education District and a Steel Industry Town respectively. This reveals that, besides tourist (since the 1930s) and recreational (since the 1940s) developments, the Western Hills also influenced the spatial distribution of some other urban functions during the period.

In conclusion, the changing importance of cultural tourism during the post-war period between 1945 and 1949 was interesting. When the municipal officers saw the possibility for Beijing to be the national capital, they cared little about cultural industry as an economic strategy because a capital city could easily prosper by providing service to the bureaucrats instead of tourists. But once that hope faded, the municipality soon fell back on the cultural industry again. This dramatic turn showed a Chinese version of what Yúdice’s concept of "the expediency of culture." During this period, while tourist and recreational developments continued to be linked, the scenic and productive features of the Western Hills area were also related to the operation of urban Beijing by fulfilling two new functions, namely, educational and industry. As a result, the land use pattern of the Western Hills was increasingly subject to the urban capital investment.

The Idea of Production (1949-1978)

The Communist Party seized all the suburbs of Beijing on 17 December 1948, and finally took over the old city when the KMT troops surrendered peacefully on 31 January 1949. Eight months later, Mao Zedong (毛泽东, 1893-1976) announced the creation of the People’s Republic of China from atop the balcony of Tiananmen and made Beijing a socialist capital. In the following twenty-seven years under the leadership of Mao,
Beijing, as other places of China, underwent dramatic changes along with a series of social and economic reforms nationwide. All through this period, the Beijing Municipal Government made a series of city planning efforts, but only the 1958 plan was approved by the Central Committee and partially implemented. Such frequency and uncertainty reveal the complexities and contradictions in the urban developments of post-1949 Beijing, and the constant changes in the social-political conditions of the country that made a plan soon obsolete. However, these efforts for Beijing developed around common motifs that obsessed the whole country or the world at the time. In this context, the relationship of the Western Hills and Beijing greatly changed.

The first round of city planning for post-1949 Beijing began on May 1949 along with the establishment of a planning committee within the restructured municipal government. Soon after, the committee hired experts from both China and the Soviet Union to devise a new comprehensive plan for Beijing, who debated with each other mainly on two issues. First, concerning the location of the central government, the Soviet Union experts and many others argued that downtown Beijing should be the choice because it was already the political center of the nation and had the infrastructures that could be utilized to save money. But a few others, like Liang Sicheng (梁思成, 1901-1972), preferred to locate the central government in the west suburb so as to better preserve the historic appearance of the old city. Second, concerning the economic development, the Soviet experts criticized Beijing as a consumption city that lacked real industries, and claimed that a socialist capital had to have an industrial base so as to have enough working class population. This was the first time that Beijing's industrial development was justified in an ideological way. All Chinese experts agreed to
strengthen the industrial sector of the city, although few shared this critique of the distinction between production and consumption. After a bitter dispute for more than a year, the committee finally submitted a compromise plan on February 1951, which basically followed the proposal of the Soviet delegation to locate the central government within the old city and to expand Beijing's industrial sector.

More specifically, this plan introduced two major changes to the relation between the Western Hills and urban Beijing. The first change was that the non-commercial recreation of local working classes replaced cultural tourism as a major link between the two, which was best reflected in the functional zoning of the 1951 plan. The urban and suburban lands of Beijing were arranged according to the basic functions of dwelling, work, recreation and transportation, with that of work being further subdivided into administration, industry and education. Like the 1947 plan, the 1951 continued to designate the Haidian Town as an educational district and the Shijingshan Hill as an industrial district. However, when it came to the Western Hills and the immediate environs, the 1951 plan used the term "scenic and relaxing district (fengjing xiuyang qu)," which merely emphasized the area's recreational function without explicit reference to its tourist utility. This change in attitude seems to be related to the idea of "production" that the Soviet Union experts had advocated. If Beijing was to be a productive city dominated by industrial working classes, then tourism was no longer so important as a development strategy.

The relationship between the Western Hills and urban Beijing also changed in 1951 due to the proposal for establishing an urban green open system. This system was designed to chain together the historic sites, the brick-kiln pits, the windbreaks and the
water bodies in urban and suburban Beijing with several continuous green corridors. Two of these corridors specifically linked the Western Hills to the old city: the first one ran from the Summer Palace, through the Long River, to the Three Seas; and the second one ran from the Babao Hill, through the Yuyuantan Lake, to the Lianhuachi Lake and the moat. Along the way, the two corridors ran through most historic and natural resources of the area between the hills and downtown Beijing, combining historical preservation with nature conservation. Although green open space in forms of greenbelt, park or playground had been seen in the previous rounds of city planning for Beijing, it had not previously been used in such an integrated way. This may indicate the increasing threats of environmental deterioration and heritage destruction at the time. With its east-most hills and water bodies being further integrated into the old city in the form of the green corridors, the Western Hills began to play a role in ameliorating the deteriorated urban ecology of Beijing, a function that exceeded its traditional sightseeing utility.

However, the 1951 plan was criticized for lacking sufficient survey and research, and its authors failed to achieve consensus on some key issues. Thus it was not submitted to the central government, remaining a point of reference material than an official regulatory document.

With the introduction of the first Five-Year Plan (1953-1957) to China in late 1952, the second round of city planning for Beijing began. In consultation with the Soviet experts, the Municipal Government drew up two draft plans in 1953 and 1957 and the final plan in 1958. Viewed together, these draft and final plans revealed an impressive phenomenon of this period: all the discussions increasingly centered on the idea of production that the Soviet experts had touched upon in 1950. Ever since the 1953 draft
plan claimed that the Beijing's development should serve production, the central
government and ultimately the working people, there had been three ramifications of the
idea of production that we can find in the draft and final plans: industry was prioritized,
history was criticized, and nature was manipulated.

The priority of industry had been justified in a similar way in 1950. For example,
the 1953 draft plan was critical of Beijing's weak industrial sector as unbecoming to its
status as a socialist capital, requiring expansion of the existing industrial factories and the
building of many new ones. But it rejected a concentrated pattern of industrial
development in favor of an evenly distributed one. This point was further confirmed by
the 1957 draft plan, which urged that Beijing be turned into a modern industrial base with
its factories evenly distributed within the region. Finally, in order to support the
industrial sector with more grain and more steel, all the population of Beijing were
organized into seventy-seven People’s Communes, each of which was a self-contained
unit that included farmlands and industrial factories (mainly for steel-making).
Accordingly, the municipal government revised the 1957 draft plan, dividing the old city
and its nearby suburbs into a number of physical clusters surrounded by extensive
greenbelts. Facilities like factories, offices, schools, hospitals and houses were all
included within each cluster. As an extreme form of industrial development, the 1958
plan reflected the Communist leaders' increasing eagerness to modernize the country.

Meanwhile, a critique of cultural heritage also appeared. Based on a dialectical
materialist view, the critique reevaluated the historicity of Beijing in both positive and
negative ways: on the one hand, the historic relics were regarded as the great creations of
Chinese people in the past, featuring magnificence, regularity and symmetry; but on the
other hand, they were regarded as primarily having served the reactionary ruling classes. Accordingly, the 1953 draft plan claimed that, with the initiation of the socialist development, the urban pattern of old Beijing had to be remodeled so as to suit and reflect the new mode and relation of production. It even proposed to demolish those historic features that conflicted with people’s contemporary demands. Similarly, with no mention of historic preservation, the 1957 draft plan proposed reconstructing the old city by replacing a large number of dilapidated old houses with new high-rise buildings. Lastly, the 1958 final plan was sharply critical of cultural heritage, urging the expansion of Tiananmen Square, the reconstruction of the main streets and the demolition of old houses so as to change the existing face of the old city as soon as possible. In these plans, although cultural heritage was still prized for being the past creation of Chinese people, it was degraded as a form of decadence that was incompatible with the values of the modern era. While historic preservation was still legitimized in terms of nationalism, it had begun to lose its value.

The third ramification of the idea of production was the ambition to change the natural environment. The 1953 draft plan was the first to require a transformation of the existing natural environment so as to create favorable conditions for industrial development. Because Beijing suffered from water shortage, dry climate and sandstorms, the draft plan proposed to build dams and reservoirs at the Yongding River and the Chaobai River, to dredge the existing lakes and rivers, and to turn the low-lying lands and the brickkiln pits into artificial lakes. It also urged planting trees and building recreational facilities in the areas like waterfronts and hilly lands. The 1957 draft plan went further to explicitly claim that forestation was a productive endeavor, which combined urban
beautification and economic benefits together. Thus it proposed to prevent sandstorms by covering with vegetation all the places not suitable for building.\textsuperscript{167} For similar reasons, the 1958 final plan particularly designated the Wofo Temple (卧佛寺) area and the Baobao Hill (八宝山) of the Western Hills as a botanical park and a playground respectively.\textsuperscript{168} Viewed together, such combination of forestry and hydraulics with new recreational development diverged from that of the 1951 plan: there was no mention of historic preservation at all. This neglect, in relation to the critique of cultural heritage, indicates that an avant-garde attitude toward the past was now dominant.

We have seen that, in the third quarter of the twentieth century, the goal of city planning for Beijing was not merely to bring economic prosperity, but more importantly to turn Beijing into a modern city based on the Marxist theory of production: industry was prioritized, history criticized and nature manipulated. Most importantly, production was favored over consumption, which was seen as adverse to the socialist modernization. The next question to ask is: how did this vision of modernity influence the relationship between the Western Hills and the urban development of Beijing from 1949 to 1978? A most significant change was that cultural tourism was totally missing. But for a municipality that was preoccupied with modernization, tourism might constitute a form of consumption could contribute to local revenue, but it was not as directly profitable as the other two sectors of economy. This is not to say that tourist activities were prohibited in the Western Hills area: they were simply ignored. On the other hand, the Marxist critique of cultural heritage further discouraged the previous efforts to turn the historic features of the Western Hills into economic capital. In the rhetoric of production mode and relation, historic preservation lost its political and economic legitimizations and the
historic structures of the Western Hills were increasingly seen as a kind of decadence rather than something to be proud of as national identity. There was still no consensus on the value of cultural heritage at the very beginning of the 1950s, but after 1953 historic preservation was suppressed altogether. Therefore, it was the practical and ideological ramifications of the idea of production that invalidated the Western Hills as a cultural resource for the city of Beijing.

Instead, the Western Hills's natural features were increasingly turned to facilitate the urban development of Beijing. Because this area had environmentally superb historic sites as well as the undeveloped lands that were topographically unsuitable for mass construction, it became a major arena for experiments in modern forestation and hydraulic engineering. The hills, lakes, rivers and aqueducts, low-lying lands, and even pits were all integrated into a green open space system for the city. While this system also served as a public amenity for local people with parks, playgrounds and sanatoriums scattered around, its primary aim was a betterment of the deteriorated urban environment to facilitate industrial development by preventing sandstorms, changing climate and reserving water. In this sense, the recreational function of the Western Hills was subordinate to its environmental significance.

To summarize, during the period between 1949 and 1978, the Western Hills became an integral part of an ambitious project of modernization promoted by a group of progressive avant-gardes. With the decline of cultural tourism, environmental concerns took over as the major link between the mountain and the productive city.
Displaying China to the World (1978-2012)

The turning point for the urban development of Beijing came in April 1980 when the Beijing Municipal Government held a meeting with the General Secretary of the Communist Party Hu Yaobang (胡耀邦, 1915-1989). Hu pointed out that Beijing was primarily a national political centre; but at this same time, it was also China’s window through which the outside world would get to know the country. Because the previous over-investment in heavy industry had resulted in the environmental pollution and an inadequate service sector, it was thought that Beijing should turn to developing tourism, finance and high-tech industries that were ecologically and socially sustainable.\(^{169}\) Hu’s comment marked the turn of Beijing from a production-oriented city to a display-oriented one. From then on, the Beijing Municipal Government conducted three rounds of city planning for Beijing, each of which coincided with the events of national significance. The 1982 master plan was put forward when the new leader Deng Xiaoping (邓小平, 1904-1997) launched “Reform and Opening up,” which replaced Mao's idealism with pragmaticism. The second round of planning began around 1992 when Beijing successfully held the Eleventh Asian Games and submitted the official application for holding the Olympic Games. It was also during this period that the country’s leaders confirmed market economy as the goal of China’s economic reform. Finally, the 2004 master plan was initiated after Beijing successful bid to host the 2008 Summer Olympics and the admission of China to the WTO in 2001. These events increasingly transformed Beijing into a city that displayed China to the world.

Beijing's globalism had been articulated in two ways. In the 1992 master plan, in addition to its traditional role as a national political center as well as a national cultural
center, the city was given two new titles: a world-renowned historic city and a modern international city. This was different from the 1982 plan that still bundled historicity with ethnic diversity and educational resource as a part of culture, indicating that historicity and modernity were regarded as two key features of globalism. Ten years later, the 2004 plan rearticulated Beijing's globalism based on the notion of "sustainable development:" 1) economically, the city should be based on international communication, tourism, service, aviation and high-tech industries; 2) socially, the city should feature a high standard of living and social equity; and 3) environmentally, the city had to be historically identifiable, ecologically sound and infrastructurally advanced. The plan claimed that a balance among the three aspects was the key to a heightened international status of the city. This was the first systematic articulation of Beijing’s globalism. It indicated that modernization was still the ultimate preoccupation for Chinese leadership, and that globalization was both an approach to and a result of that. Particularly, in this formulation, the physical environment was regarded as an agent of change rather than merely its passive reflection.

In fact, during the period between 1978 and 2012, the environmental aspect of "sustainable development" had always been the focus of city planning for Beijing. The municipal government seized environmental protection, historic preservation and infrastructural update as major instruments for displaying the historic and the modern achievements of the country. As for environmental protection, all three master plans mandated that heavy industry be downsized and nature conserved and restored. For example, in the 1982 master plan, the existing industrial plants were required to be shut down or relocated, while no new plants would be established. Abandoned pits would be
used for groundwater recharge. Meanwhile, this plan paid special attention to the hilly lands, designating a few of them as Nature Preserves within which urbanization and mining were not allowed so as to protect headwaters and trees. The 1992 master plan insisted on replacing coal with cleaner sources of energy like natural gas, and better managing mountain gullies to reduce landslide. In 2004, the steel factory located at the south foot of the Western Hills was mandated to move out of Beijing because it caused too much pollution. These measures, together with population control and decentralization through new town development, indicated the end of the previous marriage between nature manipulation and heavy industry.

The master plans produced during this period also increasingly stressed the importance of historic preservation, gradually discarding the previous Marxist critique of cultural heritage. The 1982 master plan encouraged repair of the dilapidated historic buildings, regulating the height and style of the new buildings in historic areas, and conducting preservation planning for individual monumental sites as well as the old city. It also designated a few areas featuring both natural and cultural resources as "scenic sightseeing area." In response to the fact that China joined the International Convention Concerning the Protection of World Cultural and Natural Heritage in 1985, the 1992 master plan introduced the concept of "World Cultural Heritage" for the first time, renaming "scenic sightseeing area" as "scenic historic area" to highlight the role of culture in the formation of such landscape. Moreover, the 1992 plan took a landscape-based concept of heritage management, claiming that the historic sites had to be protected along with their surroundings, and the entire old city and its immediate environs should be managed as a whole. The influence of UNESCO preservation instruments was more
evident in the 2004 master plan, which featured a detailed classification of heritage resources that included Modern Architecture, Vernacular Architecture and Intangible Heritage. Particularly, this latest plan was the first to stress the relationship between heritage landscape ("scenic historic area") and its local communities, calling attention to land acquisition compensation, household registration reform and infrastructural improvement. Such embrace of UNESCO instruments reflected the planners' eagerness to integrate Beijing as well as China into the international community. It was hoped that, by being in line with these international standards, Beijing would be accepted as a global city.

The municipal government had also paid great attention to the urban infrastructure, such as water supply, sanitary sewerage, energy, and especially transportation. A most noticeable feature of the transportation development was a group of ring roads around downtown Beijing. In the 1982 plan, seven ring roads were clearly designated, and the Western Hills area was between the fourth ring and the sixth ring. These ring roads were combined with many other roads, the subways and the railroads to form a network. This concentric pattern of public transit was further developed in 1992 and 2004, determining how people today travel between Beijing’s urban core and its suburbs.

During the three decades between 1978 and 2012, the most important change of the Western Hills was the designation of the whole area as a "scenic sightseeing area" (1982) or later "scenic historic area" (1992) as well as the inclusion of the Summer Palace on the UNESCO World Heritage List in 1998. Accordingly, the governmental regulations on the land use within this area became increasingly stricter, prohibiting real estate
developments on the hillside and nearby flat lands so as to preserve the historic features (including the paddy fields near the Summer Palace) and save space for reforestation. In addition, the three master plans emphasized the different forms of connectivity between the Western Hills and downtown Beijing, restricting the building height along the visual and wind corridors in between and designating the Long River as a sightseeing passage. But this is not to say that new developments were no longer allowed in the Western Hills. Rather, the area has been developed in a selective way, the historically or ecologically sensitive lands being mostly managed in the form of public parks like the Beijing Botanical Park, while the rest were often designated as high-tech bases like the flatland north of the hills.179 Thus, with its historic, scenic and ecological features, the Western Hills increasingly joined the city in an endeavor to display a modern China to the world.

Summary

We have seen how the Western Hills was increasingly incorporated into the urban visions for Beijing. These visions were in direct response to the crises and opportunities that the city faced at different moments of modernity, demonstrating how people in Beijing had made the intentional choices in order to become players in the modern world. With its historic, scenic, productive and ecological features, the Western Hills has been historically related to the emergence of cultural tourism, city beautification, recreational development, education and high-tech campuses, industrial production, and globalization in Beijing. These new forms of development had been integral parts of the modern transformation of the city as either economic impetus or political instrument.
Most importantly, this process of transformation had featured the transnational flow of ideas and practices, such as municipality, tourist development, zoning, Marxism and heritage, demanding attention for what Patsy Healey terms "contingent universals:"

... most ideas and examples of practices which circulate in and around the planning field are likely to be shaped by their origins and by the channels through which they have travelled. If this is the case, then it is helpful to maintain an awareness of origins and travel trajectories when assessing the potential value and impact of a specific idea or practice when it lands in a particular place.180

The case of Beijing shows that, while the urban visions that influenced the modern relationship between the Western Hills and the downtown area had mostly originated outside China, they were intentionally selected and adapted according to the changing local conditions. Thus it is important to balance between specificity and generality when we examine the transnational travels of planning ideas and practices.

The relationship between the Western Hills and urban Beijing exists not only at the level of idea but also in a real world. In fact, many aspects of these visions failed to be realized under the influences of various stakeholders. For example, the adjacent counties never accepted Beijing's administration division proposed in the 1928 plan and the 1938, simply because they did not want to sacrifice their own vested interests. Thus during the period between 1928 and 1949, the actual area under the administration of the Beijing Municipal Government was the same as that previously controlled by the Gendarmerie Division and the Five Battalions.181 Even after Beijing finally acquired the needed lands and resources in the post-1949 era, the municipal planning visions continued to be compromised by the departmental interests of the central government.182 I have therefore tried to avoid over-reading the "ideas" by seeking other sources that
would elucidate what really happened on the land. The findings are presented in the five thematic chapters that follow.

Notes

100 For a detailed review of the local administration systems in ancient China, see Zhou Zhenhe 周振鹤, Zhongguo lidai xingzheng quhua de bianqian 中国历代行政区划的变迁 [The changes of administrative division in China] (Beijing: The Commerce Press, 1988), 78.

101 Ibid.


105 Dray-Novey, "Spatial Order and Police in Imperial Beijing," 895-909.

106 See Chang Lin 常林 and Bai Hequn 白鹤群, Beijing Xi Shan jianrui ying 北京西山健锐营 [The jianrui camp at the Western Hills in Beijing] (Beijing: Xueyuan Press, 2006). See also Liu Maokun 柳茂坤 and Bai Hequn 白鹤群 eds., Jing qi wai san ying 京旗外三营 [The three battalions outside Beijing City] (Beijing: Beijing Press, 2000).

107 See Han Guanghui 韩光辉, "Qingdai Beijing chengshi jiaqu xingzheng tansuo" 清代北京城市郊区行政界线探索 [Administrative boundaries of suburban Beijing during the Qing Dynasty], Acta Geographica Sinica 54/2 (1999):150-157.


109 I arrive at this conclusion partly in reference to Bai Dunyong 白敦庸, Shizheng juyao 市政举要 [A list of the key points of municipality] (Shanghai: 大东书局 Dadong Publishing House, 1931), 9-14.


111 Ibid., 667-670.

112 Ibid., 675-678.

113 See Xi Zhiqun 饶志群 and Lin Huan 林欢, "1915-1916 nian Jingzhao difang zizhi lunshu" 1915—1916年京兆地方自治述论 [A discussion of the local autonomy in Beijing 1915-1916], Shoudu shifan daxue xuebao (shehui kexue ban) 首都师范大学学报


Wang, *1900-1949 nian Beijing de chengshi guihua yu jianshe yanjiu*, 112-119. Wang provides a general review of the publications. For the original texts, the National Library and the Capital Library had a partial collection of the books, while Beijing Municipal Archive had a collection of the citizen proposals.


See Cao, *Beijing tongshi*.


Ibid.

Ibid.


Ibid.

For information about the plan for planting roadside trees, see also Municipal government document, *Beiping shi xingdao shu jihua shu* 北平市行道树计划书 [Scheme for Beiping’s street trees], 1933, J017-001-00820, Beijing Municipal Archives.


See Bai Dunyong 白敦庸, "Zhengdun Beiping shizheng jianyi shu" 整顿北平市政建议书 [Proposal for renovating Beijing’s municipality],” in *Shizheng juyao* 市政举要 [A list of the key points of municipality] (Shanghai: Dadong Publishing House, 1931), 221-251.


Cao, *Beijing tongshi*, Volume 9, 80-114.

Municipal government document, Tan Bingxun 谭炳训, *Riren qinlue xia zhi Huabei dushi jianshe* 日人侵略下之华北都市建设 [City development of North China under Japanese occupation], ZQ003-001-00207, Beijing Municipal Archives. The author was the director of the Beijing Municipal Construction Bureau during the period of 1945-1948, and he wrote this report in order to facilitate the post-war construction of the city.
This plan was later included in Beiping shi gongwu ju 北平市工务局, Beiping shi dushi jihua sheji ziliao 北平市都市计划设计资料. Volume 1 (1947), 60-66.

See Andre Sorensen, *The Making of Urban Japan: Cities and Planning from Edo to the Twenty-first Century* (London: Routledge, 2002): 114-118. This zoning system comprises of three types of ordinary zones, namely, Residential, Commercial and Industrial. It also has three types of special zones: Beautiful City Area for creating dignified urban areas primarily in city centre areas, Scenic Area for conserving natural areas of special significance, and Fire Prevention Area as firebreak in densely built up city centers and long major roads. The system was used primarily to separate heavy industry and noisy entertainment uses from residential districts, but apart from these extreme situations, a broad intermixture of uses was allowed.

Sorensen, *The Making of Urban Japan*, 144-146. This model was soon adapted to the Japanese context in the *Kanto Region Metropolitan Structure Plan* (1940), being combined with some features of Howard’s “garden city” scheme. Particularly, greenbelt as an instrument became popular in Japan in 1930s: at first it was influenced by both the Amsterdam conference and the nineteenth-century American park movement, concerning for recreational green space, but later it was the need for air defense—open space for air defense used as anti-aircraft battery and fighter interceptor base—that promoted the idea.

Sorensen, *The Making of Urban Japan*, 137-142. Only a few years after the publication in Britain of Howard’s book (1985, 1902), the Local Government Bureau of the Home Ministry published *Den’en Toshi* (literally “garden city”) in 1907, an introduction to Howard’s concept based on A.R. Sennet’s *Garden Cities in Theory and Practice* (1905). Soon after, companies like Den’en Toshi emerged in Japan to develop a series of suburban housing communities modeled on Howard’s scheme. Although these communities never attained the original vision of a self-contained city and remained dependent for jobs and services on the central city, they provided a new pattern of urban development featuring spacious suburban living and railway transit.

Municipal government document, *Beiping shi dushi jihua zhi yanjiu, yijian shu he dagang deng* 北平市都市计划之研究、意见书和大纲等, 1934, J017-001-00867, Beijing Municipal Archives. This plan was later included in Beiping shi gongwu ju 北平市工务局, *Beiping shi dushi jihua sheji ziliao* 北平市都市计划设计资料. Volume 1, 67-72.

152 Beijing shi gongwu ju, Beijing shi dushi jihua sheji ziliao, Volume 1, 67-72.
153 This delegation consisted of Secretary Ha Xiongwen (哈雄文, 1909-1981) of the Home Department, Dutch planner J.C.L.B. Pet, and an Australian architect.
154 Beijing shi gongwu ju, Beijing shi dushi jihua sheji ziliao, Volume 1, 81-88.
155 Ibid., 53-59.
156 Ibid.
157 Putting forward their proposals were four groups of experts: the Soviet Union expert delegation, Liang Sicheng (梁思成, 1901-1972) and Chen Zhanxiang (陈占祥, 1916-2001), Zhu Zhaoxue (朱兆雪, 1899-1965) and Zhao Dongri (赵冬日), and Huanan Gui (华南圭, 1876-1961). See Beijing jianshe shi shu bianji bu 北京建设史书编辑委员会编辑部, Jianguo yilai de Beijing chengshi jianshe ziliao 建国以来的北京城市建设资料 [Materials concerning city development of Beijing since the founding of PRC], Volume 1 (Beijing: Editorial Committee of the Historical Records concerning Beijing Development History, 1987), 107-168. See also Beijing shi guihua weiyuan hui 北京市规划委员会 et al., Beijing chengshi guihua tuzhi (1949-2005) 北京城市规划图志 (1949-2005) [A concise history of Beijing city planning from 1949 to 2005] (2005), 29-30.
159 Ibid.
160 Ibid., Volume 2, 448-458.
161 Ibid., 477-489.
162 Ibid., 490-499.
163 Ibid., 448-458.
164 Ibid., 477-489.
165 Ibid., 490-499.
166 Ibid., 448-458.
167 Ibid., 477-489.
168 Ibid., 490-499.
169 Ibid., 555-557.
170 Ibid., 625-687.
172 Beijing shi guihua weiyuan hui, Beijing chengshi jianshe guihua pian, Volume 2, 558-624.
173 Ibid., 625-687.
175 Beijing shi guihua weiyuan hui, Beijing chengshi jianshe guihua pian, Volume 2, 558-624.
Ibid., 625-687.


Ibid., 558-624, 625-687.


4. Cultural Heritage Management: Four Adaptive Uses

Imperial and religious properties, especially palace gardens and monasteries, were the dominant elements in the late imperial landscape of Beijing Western Hills. Occupying large tracts of land with natural springs and scenic spots, both had large complexes. The properties were highly visible and lent character to the region. Functionally, they served a privileged few who largely relied on the power of the absolute monarchy to maintain the properties legally and economically. But this changed after those political foundations vanished, as occurred in 1912. The new function and changed form of these monumental properties during the period of 1912-2012 is the subject of inquiry of this chapter.

To understand the uses of the imperial and religious properties in the post-imperial era, it is necessary to first clarify what happened to the landscape and the people before that period. The wars of 1860 and 1900 as well as the happenings thereafter greatly changed the landscape of the Western Hills, including the summer palaces and religious monasteries. In revenge for the ill-treatment of the British and French captives as well as to force the Qing court to agree on an indemnity as soon as possible, the Anglo-French allied forces looted and burned down what they believed were the most treasured properties of the Qing court in 1860. The main targets for destruction were the summer palaces northwest of Beijing, including the Old Summer Palace (圆明园, Yuanmingyuan), the Summer Palace (清漪园, Qingyi Yuan; renamed 颐和园, Yiheyuan after the reconstruction), the Jade Fountain Hill (静明园, Jingming Yuan), the Imperial Hunting Ground (静宜园, Jingyi Yuan), and the Cozy Spring Palace (畅春园, Changchunyuan), but also many princely gardens southeast of the Old Summer Palace,
such as Shuchunyuan (淑春园) and Xichunyuan (熙春园). Because most of the buildings were made from wood, the conflagration meant the disappearance of the major architectural features of the sites.\textsuperscript{184} From the photographs taken by those who participated in the campaign or visited the region afterward, we know that the fire left almost nothing except fragments of stone, brick, or metal, such as building platforms, column bases, and bridges.\textsuperscript{185} When the allied forces withdrew, local bandits then swooped in to loot the unguarded properties.\textsuperscript{186} According to the incomplete assessment of the damages made by the Qing court, there were only 13 places in the Old Summer Palace (as opposed to the original of 100) and 45 in the Summer Palace (as opposed to the original of 101) that still stood in relatively good condition after this catastrophe.\textsuperscript{187} The reason why the Qing court made no comprehensive assessment of all the properties might be because so much had vanished.

Before the war of 1900, the Qing court made two attempts to revive the damaged summer palaces. The first began on August 1873 with the plan to first rebuild 3000 buildings in the northern part of the Old Summer Palace. The mass renovation stopped a year later due to the shortage of cash and timber, but some small-scale reconstructions continued intermittently afterwards.\textsuperscript{188} The mass renovation resumed when the Emperor Tongzhi announced on March 1888 that the Summer Palace would be restored to celebrate the Dowager Cixi’s fiftieth birthday. By 1895, the Qing court had rebuilt about 56 damaged spots and also repaired the surviving ones, most of which were concentrated on the south and east slope and foot of Wanshou Shan (the Longevity Hill), while the rest of the property was still in ruins.\textsuperscript{189} On the eve of the twentieth century, only the Summer
Palace stood in a relatively magnificent condition, whereas the other summer palaces were either only partially repaired or still lay in ruins.

Shortly after, in 1900, these already crippled properties suffered a second blow when eight major world powers invaded Beijing in response to the Boxer Rebellion. The British, Italian, and German troops camped respectively in the Summer Palace, the Jade Fountain Hill, and The Old Summer Palace, plundered all the summer palaces and the prince gardens in the neighborhood once again, and also took wood from the palatial buildings for fuel. Some religious monasteries in the Western Hills were also victimized. For example, on August 26, the pagoda of Lingguang Si (灵光寺, the Monastery of Divine Light) at Badachu (八大处, the Eight Great Sites) was bombarded by the allies because the Boxer fighters inhabited the site. Similar to the anarchy of 1860, local bandits, thieves, and even Manchu bannermen participated in looting. In the Old Summer Palace, they tore down timber structures, cut down trees, and sold wooden material in the nearby market. In the photographs taken by Alfons Freiherr von Mumm (1859-1924), the German Ambassador in Beijing from 1900 to 1909, only a few lone masonry pagodas and archways (called Pailou in Chinese) remained. The Summer Palace was not burned down this time, and its buildings and trees seemed in good condition. There was no record of mass restoration of the ruinous summer palaces in the aftermath.

Therefore, in the first decade of the twentieth century, the landscape of Beijing Western Hills can be characterized in two ways. Physically, the Summer Palace stood as the major landmark of northwest Beijing, and the religious monasteries that had not been targeted for destruction still dotted the scenic valleys in great number. In contrast, in most of the other imperial properties within the region, the topographic features like hill and
lake replaced the previous buildings as the dominant visual amenity, and natural processes increasingly obliterated the remaining traces of human occupation. On the other hand, the imperial pattern of management remained. The transition of China to a republic in 1912 did not immediately change the legal status of these properties: all the summer palaces as well as the prince gardens still legally belonged to the ex-emperor and public access was denied, and the traditional religions of all ethnic groups were allowed and protected.¹⁹⁴ However, without the aegis of absolute monarchy, these rights could not be really guaranteed.

There are three sources of information that explain how the functions of the imperial and religious properties did or did not change. One is a body of documents, chronicles, and yearbooks issued by the government agencies and institutions that occupied or administered the summer palaces and religious monasteries during the period of 1912-2012. The second source includes the written descriptions and visual representations produced by the individuals, including foreigners, who visited the Western Hills at various points throughout the period. This body of knowledge not only supplements that of the first category with more details, but it also reveals information that the institutions and government agencies did not record or were unwilling to tell. Additionally, reliable secondary sources help fill in gaps in the primary sources. The three types of sources reveal that the summer palaces and religious monasteries at Beijing Western Hills had been instrumental in economic production, modern education, health care, and cultural tourism.
Economic Production: Going Back to the Productivity of Land

Before gardens and monasteries, there was the land. In the period from the late Yuan Dynasty to the early Qing Dynasty, the region between the Western Hills and the old city was economically productive. The local chronicles and travel notes by those who were there at that time depicted a prosperous agricultural landscape of fertile soil, abundant water, and populated villages. It was not until the eighteenth century that a substantial portion of the land was enclosed for the use of a few, and activities like farming, logging, and grazing were kept outside. But even so, there were still a few agricultural areas inside these enclosures, such as the spot Genzhitu (耕织图, Poems for Plough and Weave) in the Summer Palace that the Qing court used for promoting agriculture. Thus the productive potential of the enclosures was not removed, although highly controlled and for the benefit of a limited few. Because of this, new economic activities could easily be revived in them once the former control declined. Such a revival began around 1912, escalated in the 1950s, and culminated in the Great Leap Forward (1958-1962) and the Cultural Revolution (1966-1976). Non-productive uses once again resumed dominance in 1980s, but this time for the benefit of the general public.

During the period from 1912 to 1928, although the imperial household continued to hold these gardens as well as many surrounding buildings and lands as its private properties, some economic activities such as rice farming occurred in the imperial gardens. According to a property inventory of 1924, the Old Summer Palace then had about 0.411 square miles of lowland rice field and 0.336 square miles of upland rice field, accounting for half of the total property area (1.351 square miles). The other three gardens—the Summer Palace, the Jade Fountain Hill, and the Imperial Hunting
Ground—had a relatively smaller amount: 0.300 square miles of lowland rice field and 0.250 square miles of upland rice field. The exact date when rice farming started in each gardens is unclear, but an investigation report of 1928 recorded that crop farming was not allowed in the Old Summer Palace until the reign of Emperor Guangxu (1874-1908). This coincided with the years after the devastation of 1860 when all the imperial gardens were still in ruins. The spatial unevenness of rice farming might have been due to the architectural conditions of the gardens: among the four, the Old Summer Palace was in the most ruinous condition, while the others were either restored (e.g. the Summer Palace) or subject to new redevelopment (e.g. the Imperial Hunting Ground).

During the same period, the imperial gardens also attracted beverage manufacturing. This mode of production was concentrated at the Jade Fountain Hill where some of the best-quality springs in Beijing could be found. The first soda and beer company came in 1913 when its owner, Zhu Donghai (朱东海), leased from the imperial household the watercourse between the Jade Fountain Hill and the Blue Dragon Sluice (青龙闸, north of the Summer Palace), some reed ponds and rice fields nearby, and a hall within the garden called Haizi Guan (华兹馆) as the factory. Zhu had an even bigger plan for redeveloping the property by improving the access road and setting up a trolleybus company and a hotel. Thus in 1914 after the brewery went into operation, the company went into partnership with an American merchant who provided the funds and took charge of the hotel, beer production, bottling, and trolleybus. When this partnership broke up in 1926, the production facilities were sold at auction.

The rise of rice and beverage production in the first quarter of the twentieth century was technically related to the water management practices in the imperial
gardens. Rice production consumed large amounts of water for land preparation, evapotranspiration, seepage, and percolation, which required a system of channels and sluices for the water to be delivered at the right moment. Similarly, beverage production also relied on this system to get clean water efficiently. A key impact on the land was that the system protected it from floods and hill runoffs during monsoon season, because excessive water could be drained through the same channels and sluices that helped deliver and hold water in times of drought. A version of this system had already been in place in these imperial gardens since the eighteenth century, and it was originally established to secure the operation of the Grand Canal and the non-productive uses of sightseeing and dwelling. After the monumental buildings of most gardens were removed and the Grand Canal was replaced by train and sea freight, the hydraulic infrastructure that remained intact in the gardens was repurposed for agricultural development.

The introduction of economic production in the imperial gardens was a sign of the decline of the imperial household. In this period, the ex-emperor and his followers had to collect rents from rice and beverage production so as to maintain their standard of living, and in any case they were in no position to refuse the demands of the new social elites. Nonetheless the economic production in the imperial gardens before 1924 was still limited, confined primarily to the ruined areas rather than the restored ones like the Summer Palace. This situation began to change in 1924, the year when the warlord Feng Yuxiang (冯玉祥, 1882-1948) amended the abdication agreement, expelled the ex-emperor, and confiscated his rural gardens. But during his tenure, Feng did not restructure the former administrative staff, and so when he left in 1926, the imperial household took back the Summer Palace. It was a period of social chaos which came to
an end when the KMT forces captured Beijing in 1928. A public administration, the Summer Palace Administration (颐和园事务所) was soon set up to take over the Summer Palace, the Old Summer Palace, the Jade Fountain Hill, the Imperial Hunting Ground, and many farmlands in the surrounding.199 From this moment on, the imperial gardens at the foot of the Western Hills became public properties with a resulting new pattern of management.

In the period 1928-1948, the economic activities became more intense and varied and the Kunming Lake of the Summer Palace became the new frontier of agricultural development. Before then, the fish, lotus, and reed in the Kunming Lake were kept mainly for the amusement of the court, while fishing was forbidden.200 In 1929 and 1930 there were two attempts to set up a fishery company, but both failed after less than a year due to public criticism. However, under the Japanese occupation, private contractors were allowed to harvest fish, lotus root, and reed, and a fish farm was set up in 1938.201 Meanwhile, the modes of production that emerged before 1928 continued. At the south foot of the Jade Fountain Hill, Lu Mengyan (卢梦颜) immediately bought Zhu’s Donghai existing facilities and leased eighteen more old buildings (including 华兹馆) as well as two ruined foundations (开锦斋 and 甄心斋) for building new factory houses. Meanwhile, twelve old buildings outside the east gate of the garden had also been leased, and by 1947 they had housed a succession of five beverage factories for beverage production.202 In addition, during the food shortage of the 1940s, people began to level scenic mounds and fill water bodies of the Old Summer Palace for the first time in order to make more land for farming.203
The escalation of economic production also brought its antithesis. For example, Lu Mengyan’s plan to build new factory houses on the ruined foundations was later restricted because the public authority feared that new construction might impede the sightseeing of the nearby caves. The preservationist Zhu Qiqian (朱启钤, 1871-1964) even proposed in 1933 that the government should reclaim the old buildings. In the same year the mayor postponed the Summer Palace Administration’s plan for a commercial fishery in the Kunming Lake. He claimed that fish might eat up waterweeds and stir up the soil, thus rendering the lake muddy and less attractive. Such opposition to productive uses of the historic properties was rarely seen before 1928. However, such opposition was still not strong enough to remove economic production from these properties. On the eve of the communist revolution, the imperial gardens in the Western Hills were still used for producing rice, beverage, fish, lotus root, and reed.

In 1949-1957, the communist army took over all the imperial and religious properties in the Western Hills, most of which were then reopened as public property for sightseeing and under the unified management of the municipal park service: the Summer Palace on 10 April 1949, the Monastery of the Azure Clouds on 1 September 1954, the Monastery of the Reclining Buddha on 1 October 1955, the Eight Great Sites on 15 May 1956, and the Imperial Hunting Ground on 1 May 1957. The changes did not bring an end to the productive uses of these properties. For example, right after the reopening, the staff of the Summer Palace began to restore fishing ponds, raise fowls, reap reeds, plant fruit trees, and cultivate 4.9 acres of rice field along the west shore of the Kunming Lake. In the Imperial Hunting Ground, the yield of all fruit trees, grain crops, and vegetables was recorded in the governmental chronicle in 1957. These activities
accorded with the general policy of the municipal park service of the time: all public parks had to be temporarily self-sufficient because the government was in postwar financial difficulty. But this aim of self-sufficiency was contravened by another policy established in 1953: serving the working people by setting the entry fee as low as possible. The resultant limited income made it all the more imperative to increase economic production for the park, although the latter was not stressed as a top priority throughout the period.

The real upsurge of economic production came with the Great Leap Forward (1958-1960), declined for a short time around 1963, and resumed with a greater momentum in the Cultural Revolution (1966-1976). Its fundamental rationale was best expounded in an eight-year work plan made by the municipal park service in 1960, which claimed that the ultimate approach to the shortage of park funds was to make full use of every productive potential. Consequently non-productive aspects of parks had to be turned into productive ones. In the Summer Palace, the slopes of the Longevity Hill were terraced and cultivated with fruit trees, crop fields and fishponds proliferated along the west dyke of the Kunming Lake, and vegetables were planted everywhere including in flowerbeds. Even an old hall (养云轩) in 1970 was turned into an electronic factory. In the Imperial Hunting Ground, the Monastery of the Azure Clouds, and the Monastery of Reclining Buddha, the staff mainly planted fruit trees (e.g. apple and peach) and oil crops (e.g. walnut). But the most intensive redevelopment happened in the Old Summer Palace, more than half of which had been occupied by 2000 farmers, 1000 houses, and 15 factories and schools by 1981. As a result, 40% of the original artificial mounds (250) had been leveled, and only 58.3% of the original water bodies (296 acres)
remained, the others turned into rice fields and reed ponds. Such intensity of economic production was unprecedented.

The removal of ornament was a concurrent phenomenon of the period. It began with the disparagement of flowerbeds in 1957 when the municipal park service stated in its work summary that the horticultural flower had no economic value, made little contribution to solving climate, wind and smoke issues, and was costly. In 1964, the central government directly banned its departments from exhibiting potted flowers, and the existing ones were sold at a low price. In all parks of Beijing, flower exhibitions were dramatically reduced as well. For example, the potted flowers in the Summer Palace were completely removed in 1966. In the Cultural Revolution, flowers were associated with imperial and bourgeois aesthetics and became a symbol of decadence. Anarchists ran through the parks, uprooting the remaining flowers and even turf, burning relevant documents, and shutting down flower shops. This crusade against the flower largely derived from a radical pursuit of economic production. To borrow a phrase from Adolf Loos, flower growing was a crime because it was purely ornamental and useless to production.

The priority of economic production, in the form of either expansion or removal, had therefore dominated the pattern of managing the imperial and religious properties (as public park) ever since the late 1950s. Originated from a rational intention to provide the working people with affordable access to parks, it was unfortunately taken to the extreme and associated with left-wing thought. The non-productive functions of the relevant sites, such as sightseeing and recreation, were gradually downplayed and eventually suppressed. The transition had its root in the Great Leap Forward, a campaign led by Chairman Mao.
who became increasingly anxious to transform China into an industrialized modern country. To reach that goal, agricultural development had to be expanded to support that of the industrial sector, and the productivity of the imperial and religious properties was emphasized as a contribution to the larger project of national modernization.

The fervor of production in the municipal park system gradually declined with the death of Chairman Mao in 1976, and the importance of sightseeing was reasserted.\textsuperscript{220} From 1980 onward, production no longer appeared in the work plans and reports of the municipal park service, and the physical indications of that former emphasis were gradually removed. The Summer Palace pioneered in this shift. The stepped fields on the slopes of the Longevity Hill disappeared, and the fruit trees along the west dyke were uprooted. Moreover, those people who occupied the lands and buildings inside the property were relocated by 1994.\textsuperscript{221} In the other properties of the kind in the Western Hills, the removal proceeded more slowly, but it was clearly under way.

The century-long productive uses of the former imperial and religious properties in Beijing Western Hills show how the lands that had been designed as the pleasure and religious grounds for a privileged few could be redeveloped into the workplaces. Soil and water could yield grain, lotus root, vegetable, fruit, pampas grass, and fish. Old buildings and new ones built on ruinous sites could accommodate working people and factory facilities. This revival of economic production happened at a time when the country was in chaos and poverty and its people were obsessed with modernization. In retrospect, the revival would have been appropriate if there were no better ways to use these properties. However, there clearly existed visions that competed with the productive model of management. They could be found in the oppositions to the fishery at the Kunming Lake
and the beverage production at the Jade Fountain Hill during the republic period, and they could be also seen in the criticism regarding the removal of flower in the post-Mao era. The validity of the new visions for these gardens would depend on whether they could bring more benefits to stakeholders.

Modern School Campuses: Cultural Heritage and the Public Good

Historic properties at the Western Hills had been once associated with the rise of modern education in post-1912 China. Legitimized by the idea that imperial and religious assets should be reused for modern public education, a number of educational institutions occupied the imperial gardens and Buddhist temples, bringing physical and social changes to that area. Among them, the Fragrant Hill Charitable Home for the Young (香山慈幼院) and the Sino-French University (中法大学; the Université Franco-chinoise) were the most famous. They exemplify how the two major types of historic property at the Western Hills could fit into the reforms aimed at educating the modern masses. Along with this new pattern of usage came the changes in the physical conditions of the relevant properties.

The Fragrant Hill Charitable Home for the Young, founded in 1917, pioneered in the redevelopment of the historic properties in the Western Hills. It occupied the ruined site of the Imperial Hunting Ground as its main campus and started from there to expand into a large education institution with multiple campuses. The charitable home was founded at the time of a devastating flood that victimized more than six million people in North China. Some people were so desperate that they sold or simply abandoned their
children by roadside. Witnessing this, Xiong Xiling (熊希龄, 1870-1937), a high official who supervised relief and reconstruction of Beijing at that time, set up a charitable bureau for the young within the old city. Its purpose was to provide a temporary shelter and free elementary education for around one thousand homeless youngsters, but approximately two hundred children remained without parents after the flood receded in 1918. Xiong then successfully persuaded the former imperial household to lease out the Imperial Hunting Ground to accommodate the Fragrant Hill Charitable Home for the Young.222 He also succeeded in fund raising from both public and private sectors to build school buildings and provide care for the children.223 The new institution was finally inaugurated on 10 October 1920, and it later extended admittance to various other groups of children, such as those from the former imperial household and those who suffered the 1919 drought in North China and the in Hunan Province (Xiong’s hometown). Other charity institutes like the Red Cross also transferred some children to there. By 1927, the Home had housed 1520 children in total.224

The redevelopment of the Imperial Hunting Ground was advantageous for both lessor and tenant. According to the 1912 abdication agreement, the Republic promised to grant an annual subsidy of four million silver taels to the former imperial household, but the government did not pay the full amount.225 Consequently, the financial condition of the household deteriorated in the post-revolutionary era, and they turned to rental income for help. On the tenant’s side, the Imperial Hunting Ground was chosen because it had extensive vacant grounds after the wars of 1860 and 1900 and thus was ideal for new construction. There also existed a few buildings already repaired for housing a school for young girls that was set up in 1913 by Xiong, Ma Xiangbo and Ying Lianzhi. In addition,
the property was linked to the old city, the other imperial gardens, and the Eight Great Sites by a good road built by Xiong in 1917. Finally, Xiong loved the scenic beauty of the Western Hills, which he thought would help cultivate good character and morals. These factors, together with the former imperial household’s increasing eagerness to be subsidized, made the agreement mutually satisfactory.

The redevelopment of the Imperial Hunting Ground was connected to its role in the larger charitable home project. Initially intended to merely run a small-size institution that focused on early childhood education, Xiong soon found that it was necessary to provide continual education for older youth who stayed until twenty-two years old. He saw an opportunity for educational experiments aimed at modernizing rural China, arguing that the ignorance of peasants who were the majority of the Chinese population greatly hampered national progress. His plan was to train students with modern knowledge of farming and handicraft and then get them to teach peasants or perform such work themselves. He also wanted to help peasants by providing low-interest loans and holding exhibitions to spread new knowledge. Thus the charitable home functioned more like an agent of change than merely relief for disadvantaged people. The reciprocity between charitable education and social progress positioned it at the vanguard of Chinese modernization.

To realize its goal, the charitable home gradually expanded both within and out of the Imperial Hunting Ground from 1920 onward. By July 1937, it consisted of the head administration, five branch schools, and one middle school jointly opened with the Red Cross, among which the head administration and three branch schools were located within the imperial property. Together these branches covered all levels of education
from early childhood to higher education, with a specific focus on agriculture and manufacturing. The Imperial Hunting Ground was the core of the charitable home: pupils were exposed to the farms and factories, and they were inspired by the abundance of natural features of the campus itself. It was in this place that, in Xiong’s vision, students’ early interests in modern natural science would be nurtured.

As the main campus of the charitable home, the site of the Imperial Hunting Ground was redeveloped based on both Xiong’s vision and the existing landscape infrastructure. The earlier conflagration of 1860 destroyed all the timber-structures, but their marble or brick platforms remained and were well linked by a network of interconnected trails. Laid down by the imperial designers centuries ago, this infrastructure fitted into the hillside topography and provided access to the site’s major scenic spots and natural springs. Instead of bulldozing the old fabric and starting anew, all the new buildings stood beside the existing trails, and many were constructed on the platforms of the vanished timber structures. But for the most part, the new construction avoided the imperial ruins and focused on a vacant lot of 0.05 square miles in the northeastern part of the imperial property where the head administration and the 2nd and 4th Branch School were located. For its water supply, the campus relied on the Shuang Spring (双清泉, in the south part of the property) and the Zhuoxi Spring (卓锡泉, at the Biyun Monastery north of the property). The electricity came from a gas power plant outside the main entrance. Most buildings were concentrated on the gentle slope on the east part of the Imperial Hunting Ground (Figure 4. 1).
Although these buildings were generally adaptive in siting and moderate in scale, they featured a mixed style of design different from the original palace and garden buildings. A few of these school buildings still survive in the present-day Fragrant Hill Park, reminders of the stylistic choices of the Republican period. For example, the former office building (鎮芳樓) of the Charitable Home located in the present administrative zone near the eastern entrance of the park is a two-story building with a pediment above
the main entrance and several arched-window on the side facades. The two decorative features obviously derive from classical Western architecture, revealing the owners and designers’ desire to learn from the West (Figure 4. 2).

![The main office building (鎮芳樓) of the Fragrant Hill Charitable Home for the Young, housing the board of trustees and conference center. It is now occupied by the Fragrant Hill Park Archives (Photo by author, 2014/8/25)](image)

In comparison, the pavilion in the Shuangqing Villa (双清别墅) shows how a type from traditional Chinese architecture can be simplified: the hexagonal pyramidal roof gives a sense of Chineseness, but it is not curved but rather straightened (Figure 4. 3). Such coexistence of imitation and simplification is a common phenomenon of architectural design in Beijing of that period. However, because most of the Charitable Home’s buildings have been either demolished or converted for administrative uses after
1949, we can only get a sense of the campus architectural landscape through some old photos. The reason why so few buildings have been preserved is perhaps because they were stylistically distinct from the original landscape of the imperial garden and thus deemed unsuited and valueless.

The charitable home had a precarious position in the Imperial Hunting Ground because as a tenant, it lacked ownership rights to the property. After the imperial household was expelled in 1924, the municipal government became the charitable home’s new landlord. This relationship ended in 1949 when the Central Committee of the Communist Party of China (CPC) took over the property for temporary residence and
ousted the charity. Although its occupation of the Imperial Hunting Ground was short, the charitable home was related to a more enduring and widespread movement that used such imperial landscapes as campuses of educational institutions. For example, the Tsinghua College was set up on two princely gardens: Xichunyuan (熙春园) and Jinchunyuan (近春园). The Yenching University integrated seven princely gardens south of the Old Summer Palace into a single campus. After the founding of PR China, the Party School of the Central Committee of CPC (中央党校) moved into Ziyiyuan (自怡园) located between the Old and Summer Palaces. Meanwhile the Beijing 101 Middle School occupied the southern part of the Old Summer Palace. Together with the bygone charitable home, they testify to a century-long movement in which imperial properties in Beijing were transformed.

The movement of modern education didn’t stop at the imperial properties. Some religious monasteries in the Western Hills were also subject to the same pattern of occupation. The Sino-French University, founded by the social activist Li Shizeng (李石曾, 1881-1973), is a good example in this respect. This institution modeled the French education system to offer all levels of education and courses in all fields of inquiry like philosophy, literature, basic sciences, and biology. From 1917 onward, the institution gradually acquired many properties and formed three school districts, one in the old city and the other two in the Western Hills and its vicinity. Li explained that many branches were located far from the urban area because it facilitated the research of natural sciences and exposed primary and secondary students to nature. A number of the existing monasteries, such as the Temple of the Azure Clouds, were thus turned into two school districts located in the east and northwest parts of the Western Hills (Figure 4.4).
The relationship between the Sino-French University and these temples began well but eventually became antagonistic. For example, at the Temple of the Azure Clounds, the university began by leasing property, the profit from which pleased the abbot. At the same time, Li also started an association (碧云寺维持会) in 1918 to repair decayed buildings and redeemed others from debt and lease. Several branches of the university gradually moved into the monastery, including one branch of Lumoke Xueyuan (the College of Biology), a middle and elementary school, a hospital, and a few facilities for experimenting agriculture, forestry, and climatology. The university
demolished many statues and eventually bought the whole property from the abbot in 1925. However, this soon triggered opposition from the local Buddhists who reacted by removing the abbot from his position, declared the deal illegal, and suing Li for encroaching on the temple property. This law case came to nothing because of Li’s lobbying power and the unsettled national conditions of the time. The exact date that the university moved out is unclear; there was only one keeper left when the communist party took over the property in December 1948. The fact that no monk remained there revealed that the religious function of the temple had gone.

What the Sino-French University did to the temples at the Western Hills was actually part of a national trend since China’s defeat by Japan in 1894. Chinese intellectuals realized the necessity of education reform to train Chinese with modern science and technology, and many advocated adapting religious buildings for use as classrooms and converting their agricultural revenue for educational purposes, because the old religions were to decline. But the Qing court was reluctant to adopt this radical proposal due to its intimate relationship with the traditional religions. The republican government became more supportive of the idea, requiring temples to be registered or even directly outlawing and confiscating some types of their assets. These measures met strong opposition as believers established national organizations to protest and lobbied the political figures. But the trend persisted and culminated during the third quarter of the twentieth century, especially in the Cultural Revolution (1966-1976) when most temples were adapted for other use or simply destroyed, their monks forced to resume secular life. It was not until the 1980s that religious property received national patronage, and the few temples that escaped destruction became “heritage.”
In many respects, the gardens and monasteries were ideal sites for modern educational institutions. When reflecting upon the development of the charitable home in 1927, Xiong Xiling expressed his joy at seeing the Western Hills as the home of the modern schools, and proposed moving all the modern schools of Beijing to this area so as to form a single education village. He argued that the scenic beauty of the hills and water bodies there should be used for “public good,” especially education, because it would have positive impact on students’ personality and morals.  

This idea of “public good” became a new source of legitimacy, and schools that emulated Western education systems appeared to be ideal inheritors of the imperial and religious properties. To a large extent, the popularity of the idea of “public good” was also a major factor that had caused the decline of the former authorities at the first place.

**Landscape and Human Health: Historic Sites as Sanatoria and Resorts**

The landscape of Beijing Western Hills had abundant mineral, scenic beauty for visual pleasure, semi-closed valleys for screening against harsh winter winds and sun exposure, and moderate elevation for providing cool air in summer. By enclosing these natural features with walls and building structures at vantage points, those who lived within could benefit physically and spiritually. But dynastic rulers and religious believers cared primarily about power, ideology, possession, and pleasure. It was not until the early twentieth century that the natural features of the Western Hills were reevaluated according to a scientific understanding of human health, and they were subsequently developed into public sanatoria and private villas. Due to the fact that the imperial and
religious properties had already occupied most of the relevant resources, they became the
critical places where that new understanding was put into practice.

Li Shizheng played a pioneering role in popularization of healthcare facility in the
Western Hills. After the Sino-French University leased the Temple of the Azure Clouds
and the smaller temple nearby called Jingfu Si (静福寺), Li partnered with a French
doctor named Jean-Augustin Bussière (Chinese name: 贝熙叶) to turn some old
buildings into the Western Hills Natural Sanatorium (西山天然疗养院) in 1923, with
Jingfu Si for tuberculosis treatment and the Temple of the Azure Clouds for recovery.
A number of the sick rooms were scattered around the nearby hillside. That same year Li
also purchased a temple with a hot spring at the northwest foot of the Western Hills to set
up the Hot Spring Natural Sanatorium (温泉天然疗养院), building bathing pools, guest
rooms and a drugstore. Two years later, on the initiative of Li, the Temple of Dragon
King (龙王庙) in the Summer Palace was turned into the Summer Palace Natural
Sanatorium (颐和园天然疗养院) for general recovery and rest, which came with a
swimming pool and dining hall.247 Although differing with respect to function and
targeted group, the three sanatoria were all based on the religious and imperial properties.

These historic properties were selected primarily for their supposed relationship
with human health. Li believed mineral spring could be of great benefit to human health.
This notion was formed during his stay in France from 1902 to 1908, especially after
many visits to a hot spring sanatorium (near Lac d’Enghien and Montmorency) seven
miles north of Paris. Li learned that mineral water was closely related with
pharmaceutical and beverage production as well as tourist industry, and each mineral
spring featured a unique chemical composition that would have different effect on illness
treatment and prevention. Once returning to China, Li was attracted to the mineral springs at the Jade Fountain Hill, the Temple of the Azure Clouds and the Golden Hill. He was also interested in the hot spring at the northwest foot of the Western Hills, which contained radium that was then believed to be good for fertility and cancer treatment.248 Considering that Li Shizheng was an influential social activist of republican China, the new understanding of mineral water must have spread at least among the upper classes.

In addition, the general natural features of the Western Hills met the requirements of tuberculosis treatment before antimicrobial treatment was developed in the mid-twentieth century. Beginning in late-nineteenth century Europe, sanatoria care put emphasis on patient’s natural resistance, which was to be promoted by lengthy stay in natural settings with fresh air, moderate exercise, sunlight, and a nutritious diet.249 This theory was introduced to republican China because by 1936 tuberculosis had infected six percent of the national population (0.45 billion), resulting in the deaths of a 1.38 million people.250 In Beijing of 1935, all the young men of around twenty years old were tested positive for tubercle bacillus, and 5.8-27.3% of people in service sector were infected with tuberculosis.251 Li Shizeng himself was also infected with tuberculosis in 1917-1918 and treated with a prolonged sojourn in the verdant and quiet surroundings at the Temple of the Azure Clouds. He later recalled that it was this experience that impelled him to initiate sanatoria care together with Dr. Bussière.252

This threat of tuberculosis, together with the new understanding of mineral water, led to a building boom in sanatoria at the Western Hills. Like those set by Li Shizeng, many sanatoria were also situated in historic properties (Figure 4.5). Some of them directly occupied the existing old buildings, such as the Fragrant Hill Sanatorium (香山...
疗养院) and the Jade Fountain Sanatorium (玉泉山疗养院). The two were subject to the regulation of the Summer Palace Administration: 1) depending on their locations, the available building spots were charged differently; 2) new additions were restricted stylistically; and 3) the existing trees and old buildings could not be destroyed. Some others were newly built on historic properties’ spare lands. For example, the 1.6-acre Eight Great Sites Natural Sanatorium stood on land rented from Lingguangsi (灵光寺). The 30-year lease, dated 1930, stipulated that for 600 silver dollars rent per year, the sanatorium could build on the land, make trails to the hill foot, and would enjoy free access to the temple’s mineral spring.

Figure 4. 5 Location of the major sanatoria in the Western Hills (by author)
Through either lease or sale, many imperial and religious properties in the Western Hills were subject to new patterns of health-related use in this boom of sanatoria, and along with the new function of the historic properties came physical transformations. Such changes did not take place without controversy, which was best exemplified by what happened at the Jade Fountain Hill Sanatorium. Originally based on the old building complex at the scenic spot Cuiyun Jiayin (翠云嘉荫), this sanatorium planned to add twelve new buildings at the south foot of the hill (within the main entrance) to accommodate more patients in 1947-1948. The plan was aborted because the Municipal Committee of Cultural Heritage Management found the building style to be incompatible with the imperial landscape. Similarly, the proposal of the sanatorium director Chen Zhaolong (陈兆龙) to remove two old shaken elms for safety was also denied for reasons of historic preservation. Additionally, when the sanatorium intended to reuse the wooden frames dismantled from the old buildings, the committee refused and instead required that they be inventoried and stored. However, some proposals did get conditional approval. For instance, for Chen’s attempt to turn an old shipyard into an auditorium, the committee required a detailed documentation of the original condition through surveys and photographs so as to make possible future restoration. This case revealed the tension between sanatorium development and the policies of historic preservation.

The boom of sanatoria coincided with the popularization of hillside dwelling. The staff of the foreign legations in Peking pioneered this. Many of them had frequented the temples of the Eight Great Sites prior to the Boxer rising of 1900, occupying almost all
the minor temples at one time or another. This became more popular after 1900 when a huge influx of European and Japanese arrived in Peking, and the temples in the Western Hills had become the places for foreigners to enjoy “romantic mountain scenery where fresh water, good air and good walks are plentiful.” The site of the Great Eight Sites was considered as “one of the healthiest spots in the Western Hills.” Newly rich Chinese soon followed and even built their own villas adjoining historic properties (Figure 4.6). In the 1930s, there were twenty-seven villas in the area of the Eight Great Sites and eleven in the Fragrant Hill that belonged to high officials, warlords, and entrepreneurs. In the Temple of the Azure Clouds, Li Shizeng built a 0.33-acre courtyard (小南园) with two single-story houses of flush gable roof and vaulted windows where his family spent summers of 1918-1937. At the northwest foot of the Western Hills, the Dragon Appearing Hill (显龙山) was dotted with six villas, the owners of which were attracted by the nearby Hot Spring Sanatorium. Li’s another villa (百柿山庄) was also in the vicinity. West of the Hot Spring Sanatorium, one could find Dr. Bussière’s villa, built for his tubercular daughter. Near the Temple of the Reclining Buddha lay at least two more villas. Given the threat of tuberculosis at that time, the enthusiasm for hillside dwelling might be also influenced by the same therapeutic theories that had spurred sanatoria care. If the natural features of the Western Hills could help cure actual disease, then they should be good for general health and disease prevention.
Taking over the Western Hills in late 1948, the communist party confiscated all previous sanatoria and villas, but many sanatoria were merely renamed to continue tuberculosis treatment. At the same time, new ones were set up. By the early 1960s there were more than ten sanatoria at the Western Hills, of which nine were located in historic properties. That so many new establishments were dedicated to the treatment of tuberculosis indicates the serious situation of public health in the first few years of the People’s Republic. It was not until 1963-1976 that antimicrobials and BCG vaccination were introduced to China, and subsequently the morbidity rate dropped to 0.4% of those infected in 1979. This great advance in treatment and prevention led to a sudden surplus
of beds in the tuberculosis sanatoria of the Western Hills, and finally the question of whether the establishments were still necessary. These sanatoria gradually moved out of historic properties and became general hospitals, and by the 1980s, sanatoria care had ceased in the Western Hills.265.

In sum, from the 1910s to the 1980s, health-seekers flocked to the imperial and religious properties in the Western Hills, believing the latter to be healthful places. This stimulated property owners to build or lease land for economic profit, leading to the proliferation of sanatoria and villas. The historic fabric thus transformed along with the change in function, such as refurbishments of old structure, additions of new construction, and changes in plant and trail. In the process, preservationists once attempted to stop health-seekers from modifying the temples and gardens, but the latter eventually left because of new medical discoveries. The rise and fall of health-related uses of the Western Hills shows the great influence of health concepts on the interaction between environment and mankind.

Global Cultural Tourism: From Preservation to Restoration

The worldwide fame of Beijing Western Hills as an area of exceptional beauty began in the seventeenth century when a few Jesuit missionaries were allowed into the summer palaces of the Qing court as visitors, painters, or designers. Their later publications in Europe, such as Attiret’s A Particular Account of the Emperor of China’s Gardens Near Pekin (1752), made this part of Beijing well known to Western audiences. They also brought back some representational works, such as an album of paintings of forty views of the Old Summer Palace made by two Chinese court painters—Tang Dai
(唐岱) and Shen Yuan (沈源)—in 1744 (Figure 4. 7). These texts and images circulated in European upper classes and inspired a vogue known as “Chinoiserie” (Figure 4. 8). But as introductions, they were fragmented and incomplete because their authors were not admitted to every corner of the imperial gardens.266 It was not until the Anglo-French forces seized Beijing in 1860 that the summer palaces and other monuments in the region were finally exposed to the world. From that moment onward, the historical landscape of the Western Hills began to attract sightseers from all over the world whose activities gradually integrated the site into the global market of mass tourism.

Figure 4. 7 Painting of the view Fanghushengjing (方壶胜境) in the Old Summer Palace. Reproduced from Tang Dai 唐岱 and Shen Yuan 沈源, Yuanmingyuan Sishi Jing Tu Yong 圆明园四十景图咏 [Paintings and Poems of Forty Views of the Old Summer Palace] (1744; reprint, Beijing: China Architecture and Construction Press, 2007), 66.
The Western Hills’s early tourist development can be seen in photographic representations. Since its invention in 1838, photography developed simultaneously with the Western presence on the coast of China.\textsuperscript{267} Felice Beato (Italian, ca. 1830-ca. 1906), the semi-official photographer of the British Army during the campaign of 1860, produced six earliest images of the imperial gardens before and after the conflagration. Six views of the Western Hills all showed the summer palaces before or after the burning...
Forty years later, Alfons von Mumm (1859-1924), German Minister in China during the Boxer Rebellion, made a more thorough documentation of the Western Hills, producing impressive images of the New and Old Summer Palaces, the Jade Fountain Hill, and the Black Dragon Pond (Figure 4. 10). Besides wartime visits, Beijing also received many other foreign travelers equipped with camera during the period of 1861-1937, such as Ernest Ohlmer (German, 1847-1927), Théophile Piry (French, 1851-1918), John Thomson (Scottish, 1837-1921), Calina Dluzbnevskaya (Russian), Thomas Child (English, 1841-1898), and Hedda Morrison (German, 1908-1991). Like Beato and Mumm, these early sightseers included a large number of views of historical monuments and ruins into their albums. The most photographed sites had always been the summer palaces and the major temples, which were typically presented in a picturesque way to delight the eye.
The impetus to photograph Beijing lay in not only the authors’ personal interests but also an intention to present a faithful reproduction of the Orient to Western audiences. This connection between image production and consumption can be discerned in John Thomson’s 1873 album, a collection of photos he took in China from 1862 to 1872. The photographer explained that the project was to “convey an accurate impression of the country,” “placing the reader actually before the scene which is represented.”

Apparently, what drove Thomson to practice photography in China was his belief in the power of photographs to better arouse public interest in an exotic land. Thomson also believed that his work served as a neutral medium through which those at home could well understand China and its people. But this claimed neutrality was problematic because his catalogue of views was both selective and subjective, with preference for the
magnificent and the identifiably “Chinese.” His work, and that of others, contributed to a global tourism market in which the historical monuments of the Western Hills were consumed.

Among the Western Hills’s early visitors, some treated the historical monuments as the subjects of scholarly inquiry. With diverse disciplinary backgrounds, these academic historians focused on certain types of monuments of their interest. Carroll Brown Malone (1886-1973), an American historian who worked at the Tsinghua College from its opening in 1911 to 1927, studied the general history of Beijing’s summer palaces because these sites were associated with the West’s contacts with China. Unlike Malone, Ernest Boerschmann (1873-1949), a German architectural historian, was attracted to the Western Hills because the religious temples there were represented “the finest convictions of the Chinese.” In his eyes, the ways that the Western Hills’s temples conformed to the high ranges, embedded in groves, and faced in relation to the city best exemplified the Chinese spirit, namely, the unity of man with nature. This romanticized understanding of Chinese landscape was also seen in the work of Osvald Sirén (1879-1966), a Swedish art historian who visited the summer palaces in 1921-1922. Sirén claimed that the beauty of these sites depended mainly on their situation, water, plantings, and the way their grounds were remodeled; thus one could still get picturesque views even after the burning of the main buildings. This emphasis on the Chinese love of nature was consistent with Attiret’s comment more than a century ago, in which he contrasted the asymmetrical landscape of the summer palaces with the European preference for symmetry. In search of either direct historical associations or comparative parallels, these Western scholars had approached the historical landscape of
Beijing Western Hills more or less for “a full-blown self-portrait for which China is simply the background.”

The concept of drawing a national self-portrait via designed landscape was also shared by Oriental scholars but in different ways. Itō Chūta (伊东忠太, 1867-1954), the founder of Chinese architecture research in modern Japan, attempted to establish a historical lineage of Chinese architecture (in order to study the origin of Japanese architecture) so as to prove that Asian architecture was as long-lasting and valuable as that of the West. The study of the Summer Palace and the Temple of the Azure Clouds during his visit to Beijing in 1900-1902 later became part of his comprehensive narrative of traditional Chinese architecture. Liang Sicheng (梁思成, 1901-1972), Itō Chūta’s Chinese counterpart, worked on the same project, but for the purpose of reviving the Chinese spirit in modern design practice. Like Boerschmann, Liang also believed that that spirit existed in the form of Chinese traditional buildings. Among the historical monuments throughout the country that he visited from 1931 to 1937, the temples and palaces in Beijing Western Hills contributed to his understanding of Chinese architecture after the mid-fourteenth century. Both Itō Chūta and Liang had their like-minded contemporaries and inspired many later studies. In essence, what these Japanese and Chinese scholars longed for was a clearly visible national identity in the world of nations, which the historical landscape of Beijing Western Hills helped invent.

Although of different nationalities and with different goals, the early visitors from Beato to Liang shared a belief that the historical monuments of Beijing Western Hills represented the essence of China, and that to see them with one’s own eyes was an indispensible way of learning. The advent of photography did not replace but rather
intensified the demand for seeing because anyone could now easily record “the essential China” without knowing nearly as much about its history, language, and people as the Sinologists did. The new technology of representation together with a fascination for China lured sightseers from all over the world to Beijing. What these tourists wished to see was evident in the popular travel guidebooks of the first half of the twentieth century, in which the summer palaces and major temples of the Western Hills were listed among the top priorities (Table 4.1).283

Table 4.1 The top priorities for sightseeing in the Western Hills according to the early guides to Beijing

<table>
<thead>
<tr>
<th>Guidebook</th>
<th>Author</th>
<th>Year</th>
<th>Top priority for sightseeing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notes for Tourists in the North of China</td>
<td>Dennys</td>
<td>1866</td>
<td>Summer Palace; Old Summer Palace; Temple of the Azure Clouds; Black Dragon Pond</td>
</tr>
<tr>
<td>Guide to Peking</td>
<td>Little</td>
<td>1904</td>
<td>Summer Palace; Jade Fountain Hill; Eight Great Sites; Temple of Lion’s Nest; Temple of the Reclining Buddha; Temple of the Azure Clouds</td>
</tr>
<tr>
<td>Guide to Peking and Its Environs</td>
<td>Fisher</td>
<td>1909</td>
<td>Summer Palace (One day in a 10-day visit to Beijing)</td>
</tr>
<tr>
<td>Peking and the Overland Route</td>
<td>Cook</td>
<td>1917</td>
<td>Summer Palace; Jade Fountain Hill; Old Summer Palace, Imperial Hunting Ground; Eight Great Sites; Temple of the Reclining Buddha; Temple of the Azure Clouds; Temple of Lion’s Nest; Huang Ling (Two days in a 9-day visit to Beijing)</td>
</tr>
<tr>
<td>In Search of Old Peking</td>
<td>Arlington &amp; Lewisohn</td>
<td>1935</td>
<td>Summer Palace; Jade Fountain Hill; Hunting Park; Temple of the Reclining Buddha; Temple of the Azure Clouds; Eight Great Sites; Black Dragon Pond; Hot Spring; Shijing Shan (Three days in a 13-day visit to Beijing)</td>
</tr>
<tr>
<td>Beiping Lvxing Zhinan</td>
<td>Ma</td>
<td>1935</td>
<td>Summer Palace, Jade Fountain Hill; Imperial Hunting Ground; Temple of the Reclining Buddha; Temple of the Azure Clouds; Eight Great Sites (Three days in a 7-day visit to Beijing)</td>
</tr>
</tbody>
</table>

In addition to scopic desire, accessibility also influenced the growth of tourism. The introduction of modern transportation compressed time and space, making the
journey to the Western Hills increasingly easy and comfortable. In 1866, the primary way to reach Beijing was still by animal-powered carriage. Foreign tourists, mostly entering China from seaports along its east coast, could arrive at Tongzhou east of the capital by river transportation, but they still had to spend five days on the remaining thirteen miles by cart. From downtown Beijing it would take about four hours to cover 10 miles to the Western Hills. This slow and exhausting system began to change with the opening of the Tianjin-Beijing railway line in 1896 and the erection of a railway station inside the city wall in 1900, which considerably shortened the trip from the east coast to the capital. By 1909 the Mentougou branch line (门头沟支线) of the Beijing-Zhangjiakou Railroad had provided a speedier alternative for tourists to travel from downtown Beijing to the southwest foot of the Western Hills, while the road from the city to the Summer Palace had been macadamized for a smoother passage. By 1917 foreign visitors had relied on motorcars to reach the Western Hills, and the macadamized road had extended from the Summer Palace through the Imperial Hunting Ground and the Eight Great Sites and back to the city. Travel between Beijing and its Western Hills had been completely modernized within two decades, giving visitors “a fine balance of comfort and exoticism.”

At the same time the historical monuments of the Western Hills were gradually opened to the general public. After the incident of 1860, Westerners could easily obtain admittance to the summer palaces by bribes and be accommodated in most temples for a small fee. Influential Chinese were also authorized entry into the ruined gardens in the aftermath of the sacking. In 1909 foreigners could apply to their foreign ministers in Beijing for permission to visit the summer palaces on the fifth and twenty-fifth day of
each Chinese month when the court was absent. By 1914, after the abdication, anyone could enter by buying a ticket. When the KMT army seized Beijing in 1928, the summer palaces were confiscated and made into a public park under the administration of the newly established municipal government.

This influx of sightseers created the need for new service and recreational facilities. Except for some temples that offered accommodation for a fee, there is no evidence of such facilities between 1860 and 1900. Beginning in 1909, the year when foreigners were officially allowed into the summer palaces, various tourist facilities began to emerge. The Summer Palace, as the most important tourist attraction in the region, took the lead with a new reception hall before the main entrance of the garden that the Qing court erected in 1909 to serve refreshments to foreigners. Four years later visitors were allowed to go boating on the Kunming Lake. Two restaurants, one in 1924 and the other in 1936, were opened up respectively at the southwest foot of the Longevity Hill and on the South Lake Island, and a swimming area was designated along the west bank of the South Lake Island. A few steps west to the Summer Palace were a few inns at the foot of the Jade Fountain Hill that existed as early as 1917. The Summer Palace administration even attempted to increase revenue by turning the whole Jade Fountain Hill into a commercial hunting ground, but only a small area at the southwestern foot was finally allowed for this purpose in 1931-1935 due to concern for tourist safety. Further west, one could find the Sweet Dew Hotel (甘露旅馆, since 1919) in the Imperial Hunting Ground and the Western Hills Hotel (西山饭店, since 1918) below the Eight Great Sites. The eastern part of the Western Hills was dotted with various new tourist facilities by the 1930s, a sign of increasing numbers of tourists.
and demand for services as well as an indication that local stakeholders were awakened to
the economic benefits of tourism.

The implication of tourism for local economy of course justified the preservation
of the historical monuments in the Western Hills. It was not surprising that foreigners, the
main group of early sightseers, took the initiative. By 1909 the foreign diplomats and
some prominent individuals had formed a committee to restrain visitors from defacing
Beijing’s old monuments. Their enthusiasm for the monuments seems not to have been
matched by such enthusiasm among the Chinese, and more than two decades later
foreigners were lamenting the Chinese indifference towards their own cultural
heritage. Finally in 1935 the KMT government formed a committee to repair some old
monuments of Beijing according to a municipal plan for turning Beijing into a
sightseeing district (Table 4. 2).

<table>
<thead>
<tr>
<th>Time</th>
<th>Historic monument repaired</th>
</tr>
</thead>
<tbody>
<tr>
<td>1935/5-1936/10</td>
<td>Summer Palace (various bridges; Hanxu Pailou)</td>
</tr>
<tr>
<td>1936/10-1938/1</td>
<td>Temple of the Azure Clouds (the central portion); Jade Fountain Hill (the Yufeng Pagoda)</td>
</tr>
</tbody>
</table>
| 1946/3-1947/12   | Summer Palace (the enclosure wall; the dock at Jilantang; Shizhangting; Yunhuixiyu Pailou;
                    Paiyun Dian; Chang Lang; Yuechun Yuan; the North Gate; Xumilingjinjingjing); Temple of the
                    Azure Clouds (the bell and drum towers); Jade Fountain Hill (the enclosure wall); Imperial
                    Hunting Ground (the main gate; Jianxinzhai)                                          |

The former macadamized road linking the Summer Palace to the city was
asphalted. Additionally, a comprehensive introduction to Beijing’s historical remnants
was compiled for assisting future preservation and management. The targets of repair

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were limited because temples like the Eight Great Sites were still maintained by monks, and imperial properties like the Imperial Hunting Park had become private educational institutions (see Section 2 of Chapter 2). The weakness of the republican government hampered the implementation of its preservation plan.

By the late 1930s the Western Hills already possessed most major features of a modern tourist destination: world-famous attractions, visitation from tourists around the world, convenient transportation, service facilities, and public investment in preservation. However, this development was interrupted by the constant wars in 1937-1949, which made international travel difficult and sometimes impossible. The number and source of visitors decreased dramatically, although some attractions like the Summer Palace and its adjacent Jade Fountain Hill had been mostly kept open throughout the wartime.306 Nevertheless, historical monuments at the Western Hills still received some care. The architectural historian Liang Sicheng was called upon in 1944 to help the China and U.S allied forces identify top national monuments that needed to be protected in the campaign against Japan. The must-save list provided by Liang included the Summer Palace, the Jade Fountain Hill, the Temple of the Azure Clouds, the Temple of the Reclining Buddha, the Black Dragon Pond, and the Temple of Fahai.307 That list, revised a little bit, also helped the communist army avoid the destruction of Beijing’s cultural heritage in 1948.308 The fact that such lists could be drawn up reveals that the value of China’s historic monuments was widely acknowledged both among Chinese authorities and among Westerners by the late 1930s and the 1940s.

With the regime change following the civil war, the historic monuments in Beijing Western Hills were subject to new patterns of management. In the first few
months of the new regime, all the major historical monuments and the relevant service facilities in the Western Hills were transferred to the new state power. Ten private service facilities (hotels, teahouses, photo shops, and snack counters) in the Summer Palace were either removed or taken over by the government, and former occupants were driven out. The party central committee moved into the eastern part of the Western Hills (especially the former Imperial Hunting Ground, with the charitable home relocated) because the city was still full of secret agents of the KMT Party and lacked enough spaces for accommodating new commers, and also because the mountain constituted a good platform for air defense. Other departments were housed in temples that were then still maintained by monks, such as the Eight Great Sites and the Temple of the Reclining Buddha. Because ordinary tourists were not allowed into these temples out of a concern for safety, the monks went bankrupt without room rents and donations. Most of them surrendered the properties to the government and resumed secular life. In this way, these temples entered into the domain of public patronage, like what happened to the summer palaces in 1924. After this purification, only five sites were reopened as public parks. They were also included on the Cultural Heritage Protection Unit List at the municipal level in 1957, with the Summer Palace registered at the national level in 1961.

The biggest physical change to the Western Hills in 1949-1980 was the reconstruction of the Temple of Divine Light (靈光寺) that had been devastated in 1900. The attention paid to this monument was because at the base of the previous pagoda laid a tooth relic of Shakyamuni that was important for promoting China’s diplomatic relations with Buddhist countries like Burma and Sri Lanka. The reconstruction in 1958-
1964 removed two south-facing courtyards that were added to the northern part of the ruined site in the 1920s, and instead built a southeast-facing one with a thirteen-story octagonal pagoda in the center. Except the appearance and location of the pagoda, the rest of the new courtyard has little to do with the original east-facing temple before 1900 (Figure 4. 11). The fact that the property was not restored as it appeared in the nineteenth century or earlier revealed that the imperial past was not much appreciated at the time.

Figure 4. 11 The pagoda in the reconstructed Temple of Divine Light (Photo by author, June 12, 2014)
The changing function of the five historical monuments also deserves attention. Instead of generating revenues, these properties now operated more like public amenity. By 1953 the municipal park service had confirmed that public parks should serve the working people, and that the entry ticket should not be seen as the major source of revenue for park maintenance. Thus the Summer Palace, the Fragrant Hill Park, and the Temple of the Azure Clouds offered inexpensive daily tickets and charged nothing during festivals, while the Temple of the Reclining Buddha and the Eight Great Sites offered free entry. Subsequently the number of visitors to the Western Hills grew rapidly. For example, the visitors to the Summer Palace numbered only 74,218 from July 1934 to June 1936 and 120 thousand in 1948, but they increased to 0.265 million in 1949 and 3.188 million in 1972. Given that China severed diplomatic relations with the West (except France) from 1949 to 1972, the growth was due to visitation by Chinese and a few foreigners from the Socialist camp and the Third World.

This socialist mode of management began to change along with the end of the country’s twenty-five years of isolation in the early 1970s. The United Nations General Assembly voted to admit mainland China into the U.N. on 25 October 1971, and one year later U.S. President Richard Nixon’s 1972 visit to Beijing led to the establishment of full diplomatic relations between mainland China and Western countries. When Western leaders, diplomats, and various delegations came to visit China, a tour of Beijing’s historical monuments was always an indispensable part of their trips, and the Summer Palace, the Fragrant Hill Park were among the most frequented. The adjacent Temple of the Reclining Buddha and the Temple of the Azure Clouds, closed in the Cultural Revolution, were repaired and then reopened on 15 April 1973 to welcome foreign
visitors.\textsuperscript{320} After Chairman Mao’s death in 1976, the new leadership started the economic reform and opened the country to foreign investment once again, further encouraging the influx of foreign tourists. When Beijing was designated as a major window through which the world would see China in 1980, tourist development formally became a top priority (see Section 6 in Chapter Two). Accordingly the historical monuments of the Western Hills, as the attractions of worldwide fame, became critical for boosting China’s economic growth and representing its international image.

The reemphasis on tourist development soon stimulated an upsurge that aimed at restoring changed historical monuments or reconstructing non-surviving ones. This was exemplified by the Summer Palace where four ruined spots were restored: Sidabuzhou (四大部洲) and Cifupailou (慈福牌楼) in 1985, Suzhoujie (苏州街) in 1990, Jingfulou (景福楼) in 1992, and Gengzhitu (耕织图, Pictures of Farming and Weaving) in 2004. These projects have been conducted based on the relevant textual and representational records, on-site excavations, and sites of the same periods.\textsuperscript{321} The site’s vegetation was also altered in 1991-1994 to match historical descriptions: pines for the southern slope of the hill, cypresses for the northern slope, willows and peach trees for the lakeshore, lotus for the lake, and cover plants everywhere.\textsuperscript{322} The administration staff generally wished to restore the Summer Palace to its eighteenth-century splendor by removing features from other periods and rebuilding missing ones from that particular period, but this hope was unrealized. For example, at Gengzhitu, the topography was basically restored according to that of the eighteenth century, but the restored water body was lined with pounded red clay and silt for preventing seepage. The remains of a navy school built in 1898 were preserved and merged into the newly replicated buildings, and new plants and paved
spaces were added to facilitate viewing and strolling (Figure 4. 12). Therefore, although the replicated parts were in harmony with the old stylistically, the sense of authenticity was confusing. After so many restorations, the Summer Palace is now comprised of elements dated back to or modeled on diverse periods.

![Image](image.jpg)

**Figure 4. 12** The southeastern corner of the spot "Pictures of Farming and Weaving," showing the 18th-century replications, with the later navy school further north (Photo by author, August 26, 2013).

Besides the issue of authenticity, restoration also aroused other controversies, such as the debate around the Old Summer Palace. This debate began with a letter to the government co-signed by a group of celebrities in 1980, which urged to protect the Old Summer Palace for the purposes of tourist revenue and national tradition. By then the site had been mostly leveled and redeveloped into farmlands, reservoirs, huts, factories,
schools, warehouses, shooting ranges, and roads. Although the letter aroused wide sympathy, there was no consensus about how the ruined site should be restored. Some of the experts opposed any reconstruction out of fear of substantial investment, whereas others worried about the erasure of historical evidence. A compromise was finally reached to restore the general topography, install necessary tourist facilities, and rebuild only a few key buildings. The government started the work in 1984, and by 2001 all the former occupants (except the 101 Middle School) had been relocated outside the property, most mounds and lakes recovered, some vegetation adjusted to facilitate sightseeing, many ruined foundations cleared, the European palaces and the southeast main gate rebuilt, and various service facilities added. But this work was called off in 2005 due to public criticism regarding the lining of the lakes with plastic material. This treatment was decried as not ecological because it destroyed aquatic life and prevented groundwater from refilled. Some poorly rebuilt structures and the increasing real-estate development in surrounding areas also drew criticism.

Although controversial from the very beginning, restoration was adopted as an important way to increase tourist attractiveness of ruined historical sites. During the same time when the New and Old Summer Palaces were under reconstruction, most of the other historical monuments of the Western Hills were also more or less restored, such as the archway (智光重朗牌坊) in front of the Temple of the Reclining Buddha erected in 1983 and that of the entrance palace (勤政殿) of the Fragrant Hill Park rebuilt in 2002. The restoration was problematic from a heritage perspective, but it did allow formerly closed sites to be accessible again. For example, the Temple of Fahai had been under
repair since 1972 and reopened in 1985. Overall, most projects proceeded without criticism as long as restoration still promoted tourist development.

During the same period, a large number of new service facilities were added to the historical properties to better cater to tourist needs. The Fragrant Hill Park exemplified this. To facilitate panoramic viewing, the park administration erected a number of old-fashioned pavilions at hillside lookouts, such as Chongyang Ge (重阳阁, 1986) on top of the peak hill, and installed a 1400-meter aerial cableway above the northern ranges to take visitors to the peak in eighteen minutes. Vacant lands (e.g. 知松园, 1989) and waterfronts (e.g. 静翠湖, 1991; 佳日园, 1993) were landscaped and endowed with old-fashioned buildings. Hotels and restaurants were set up: some were adapted to republican structures (e.g. 玉华山庄) and others (e.g. the Fragrant Hill Hotel, 1982; 松林餐厅, 1983; 香山别墅, 1986) were built anew. Such developments were also seen at the Eight Great Sites. From the perspective of historic preservation, the properties should have been protected from the incursion of modern facilities. But from a practical perspective, these additions were necessary if mass tourism was the ultimate goal; after all, the old sites were not originally designed for modern demands.

Massive restoration and facility construction went hand in hand with what Françoise Choay calls “the ecumenical inflation of heritage practices.” In post-1980 Beijing, public authorities became increasingly enthusiastic about identifying every physical remnant of the past and preparing it for nomination. From 1979 to 2012, twenty-one more historic sites of the Western Hills were added to the Cultural Heritage Protection Unit List at the municipal level, and twelve of them were further added at the national level. This new phenomenon was closely related to the global trend of
“inflationary” heritage practices at the time. China ratified the International Convention Concerning the Protection of World Cultural and Natural Heritage on 12 December 1985, and since then the World Heritage Site had become the highest status that a site could possibly obtain within a global hierarchical inventory. Such status directly related to economic benefits. For instance, right after the Summer Palace was inscribed on the World Heritage List in 1998, its staff explained that high-priced tickets were tied to the site’s value and necessary for maintenance. They thus raised the entrance charges in 2001 and 2004, increasing the annual income of the property by 270 million Chinese Yuan per year (six million visitors per year). An inscribed site becomes so profitable that public authorities are eager to have their heritage sites included on the UNESCO list, a desire that further stimulates the surge of restoration because a well-restored site has more chance of gaining national nomination and international approval than a ruinous one.

Since the World Heritage Site was the highest status, its criteria for nomination had an impact on heritage practices at national and local levels. The designation of buffer zone—a requirement for nomination stated in the Operational Guidelines for the Implementation of the World Heritage Convention as early as 1977—in the post-1980 landscape of the Western Hills was a most noticeable manifestation of this impact. In 1987 the municipal government required that any Cultural Heritage Protection Unit under its jurisdiction be surrounded by a buffer zone within which new constructions were to be regulated. The focus of control was apparently on the buffer zone’s visual qualities of height, density, form, scale, and color. Buildings adjacent to a heritage site or along traffic and viewing corridors leading to that site were particularly required to be in harmony with the site, and a traditional design style would be preferred. Given that
China signed the UNESCO Convention after the Operational Guidelines had been implemented, these buffer zones should have been designated to prepare the relevant sites for the World Heritage nomination. But the over-emphasis on visual qualities revealed that the ultimate purpose was to enhance tourist experience. By 2007 all municipal heritage sites in the Western Hills had been designated with respective buffer zones.338

The mandate for buffer zone meant that heritage extended beyond the confines of the site itself, which thus had a greater impact on the regional landscape of the Western Hills. The buffer zone of the Summer Palace, designated in 1987, provides a good case for analysis (Figure 4.13). As part of Beijing’s preparation for the 2012 Summer Olympics, the municipal government initiated a project in August 2003 to beautify the buffer zone of the Summer Palace, which focused on the reconstruction of a lotus pool outside the eastern wall of the property that had been filled in ten years ago as a parking lot. Now the pool, with a gently sloping water edge, lotus flowers, native trees, and two waterfront platforms, was claimed as part of the pastoral landscape that surrounded the site in the imperial era.339 The contribution of this five-acre pool to the historical environment of the Summer Palace was questionable, although it was certainly more likely to delight the eyes than the former parking lot.

The buffer zone was intended to protect local beauty, but the limits it imposed frustrated some local residents. The Central Party School of the Communist Party of China (中央党校), located right outside of the Summer Palace, had been long complaining about the policy of building height restriction. With both of its two campuses designated in 1987 as part of the buffer zone of its adjacent World Heritage Site, the school could not expand by building high-rise buildings.340 This revealed that,
for local residents who were not directly benefiting from the tourist industry, heritage practices like buffer zone incurred inconvenience and difficulty. Without a compensation mechanism, such conflicts between sightseers and local stakeholders inevitably escalate.

Figure 4.13 The buffer zone of the Summer Palace and the Jade Fountain Hill (Source: http://www.bjww.gov.cn/wbsj/bjwbdwDetail.htm, redrawn by author)

Through restoration, facility construction and buffer zone, the historical landscape of the Western Hills has experienced dramatic transformations since the early 1980s. Both surviving and vanished features of the imperial past were consciously “recycled under new circumstances as resource for coping with the present.”341 Meanwhile many new elements dating after 1912 were removed to make room for replicas of earlier
elements and new facilities or modified according to a traditional style. Originals, replicas and entirely new elements are now juxtaposed and merged into the kind of “staged authenticity” that Dean MacCannell identified forty years ago. Although these heritage practices aroused concerns about restoration cost, loss of historic evidence, poor-quality replica, and restriction on new construction, few Chinese seemed to deny the necessity for tourist development.

The decisive mechanism behind this favorable attitude toward tourism was China’s globalization. Since Nixon’s 1972 visit had shifted the Cold War balance, the historical landscape of the Western Hills increasingly served as an interface between China and “the Great Nations of the world,” rather than as primarily the pleasure ground for working people. At this international interface, China was selectively represented to both foreigners and modern Chinese for the purposes of tourism revenues and national pride. Thus the importance of the historical monuments was economical, political and even perhaps emotional. Nixon’s 1972 visit was regarded not so much as a beginning but a return, a recuperation and a restoration. The role of the Western Hills as an international interface can be traced back at least as early as the moment when Felice Beato took photos in the summer palaces. Soon Westerns flocked into the imperial gardens and religious temples of the Western Hills to view an exotic civilization that was fascinating simply because it was so different from the West. The Japanese soon followed, searching for their origins. Finally, the modern Chinese also rushed into these properties to find a Chinese spirit that they found increasingly elusive and ambiguous in modernity. These various forms of self-discovery, together with an intention to simply wander the scenic settings, had already created a global demand for visiting the Western Hills by the 1930s.
Even the two World Wars and the Cold War did not completely restrain this demand but merely influenced the places from which tourists came. Thus historic preservation emerged in the 1930s to stabilize the supply of tourist resources, restoration prevailed since 1980s to further increase that supply, and service facility and infrastructure proliferated to provide comfort and convenience. It was in this century-long interaction between demand and supply that the historical landscape of Beijing Western Hills had been constantly evolving.

**Summary**

In the contemporary context cultural heritage is always discussed in relation to tourism. Yet, in the cases we have examined, global tourism was just one model of adaptive use that a historical monument might be subject to, and the summer palaces and temples in Beijing Western Hills had been also instrumental in economic production, public education, and human health. The versatility of these historical monuments resulted primarily from the diversity of their constituents: fertile lands and abundant water attracted farmers, extensive grounds and spacious buildings were ideal for schools, leafy hillsides and mineral springs suited the needs of health-seekers, and artistic compositions in traditional style delighted sightseers in search of exoticism, self, and pleasure. Equally important, facilities like canals, roads and bridges were already installed there and only required continuous maintenance, saving new managers from spending substantial sums on infrastructure. This made the sites popular targets for adaptive use after the decline of traditional powers.
Although different from and sometimes exclusive of each other, the four models of adaptive use did share a similarity: natural and human factors joined together to alter natural terrains, human artifacts, and living plants and animals (including humans). This flux condition of the heritage landscape points to the need for a change-based management increasingly emphasized by UNESCO and other international heritage bodies in the recent decades. The “permanence” model of cultural heritage that was first set down in the Venice Charter of 1964 has been criticized since the 1980s, and the Florence Charter of 1982 and the Washington Charter of 1987 already moved heritage discourse in a different direction. In particular, the Florence Charter calls attention to the unstable elements of historic gardens like water and vegetation, and the need to take into account the larger context outside the boundaries. However, as Robert E. Cook has stressed, it is difficult to manage landscape changes because landscape elements differ with each other in rate of change. Should we give historical fabrics and modern development equal rights of existence by juxtaposition of old and new, as Larry R. Ford has proposed?

On the other hand, the fate of the historical monuments in question also reveals that the four models of adaptive use were often exclusive of each other due to their divergent ends and patterns of management. The rise and fall of each model had thus been in close relation to that of the others chronologically, and the years 1860, 1912, and 1972 were three watersheds in the respect. Tourism emerged in the Western Hills with the coming of foreigners who gradually replaced the imperial family and religious believers as the main users of the formerly privileged sites. If the summer palaces continued their function as pleasure grounds, albeit serving a new clientele, the temples...
wider no longer used for religious purposes. The six decades after the collapse of
the monarchy, there was an upsurge of tourism in which Chinese sightseers joined
foreigners to rush into the heritage sites. But concurrently, three more models of adaptive
use emerged to compete with global tourism for ownership, access, and management. But
tourism did not prevail over the other models in 1912-1980 due to economic hardship,
power relations between public and private sectors, war, and the international situation. It
was not until China reopened to the West that tourism began successfully to defend the
historical sites from a variety of threats. Global cultural tourism thus formed the bedrock
of contemporary cultural resource management in the Beijing Western Hills.

The history of the Western Hills shows that the interest in cultural heritage has
emerged largely due to the need for self-reassurance in a globalizing world. Akhil Gupta
and James Ferguson argue that the increasing globalization results in mass
deterritorialization and then a separation between culture and place, bringing about the
need for reassuring personal and collective identities.347 Dean McCannell goes further to
point out that we moderns have to reterritorialize our identities through a search for an
absolute other that is different and authentic, and thus to travel in person becomes
necessary.348 This psychological factor was clearly seen in the early Western
photographers who visited the Beijing Western Hills for the purpose of presenting a true
Chineseness to the Western audiences. It was also seen in the Western, Japanese, and
later Chinese architectural historians who surveyed the Buddhist temples and imperial
gardens for either comparing with a different tradition or constructing a new national
lineage. All these pursuits have derived from the unprecedented large-scale interaction
among people around world, which made it imperative for everyone to define or redefine who he or she is.

While the widespread pursuit for self-reassurance has created a great market demand for cultural tourism, there are two other factors directly contributing to the rise of cultural heritage management in the Beijing Western Hills: the transition from monarchy to republic in 1912 made it possible for public authorities to take over the formerly privileged properties; and the accelerated industrial urbanization since 1950s led to the great crisis of preservation. Both factors are comparable to that of the West. Tracing the origin of the Western historic preservation back to the French Revolution, David Lowenthal mentions that the transition from absolute monarchy to democracy distinguished a “past” from a “present” morally, turning the remains of that “past” into something inherited from pre-revolutionary ancestors. Nonetheless he argues that it was the Industrial Revolution and subsequent urbanization that made more visible the definite distinctions between the ancient and the modern, arousing broad public consciousness and consensus about historical preservation and nature conservation.349 Sharing this argument, Françoise Choay chronicles the Western cultural heritage phenomenon in a more detailed way, with a focus on France.350 The close relationship of heritage management to the democratic and industrial modernization is thus a common feature shared by China and the Western countries.

Perhaps the constant alterations of the historical landscape of the Western Hills should best be seen as reflecting the perpetual relevance of nature and past to modernity. If the present is in flux, modern people had to frequently adjust their relations with nature and past so as to facilitate development. In this sense, the century-long transformation of
the historical monuments in the Beijing Western Hills is not just a reflection but also an agent of Chinese modernity in a global context.

Notes

183 There are three sources of information for us to know such changes during the period of 1860-1900: (1) the written descriptions and photographs of the foreigners who participated in the two military campaigns; (2) the accounts of some Chinese eyewitnesses; and (3) the reports presented by the administrators-in-charge to the Qing court. These texts help us know what happened to the palaces and temples through this period.

184 R.J.L. Mc'Ghee, a chaplain of the British army, gave the most detailed account of the burning of the summer palaces and its surroundings in 1860. See R.J.L. Mc'Ghee, How We Got to Peking: A Narrative of the Campaign in China of 1860 (London: R. Bentley, 1861), 201-289. For more information, see also Robert Swinhoe, Narrative of the North China Campaign of 1860 (London: Smith, Elder and co., 1861), 326-331. See also Garnet J. Wolseley, Narrative of the War with China in 1860 (London: Longman, Green, Longman, and Roberts, 1862), 218-242.

185 Felice Beato (1820s-1907), an Italian who accompanied the British army to Beijing, was perhaps the first one who got the chance to take photos of the summer palaces. Six important photographs are included in David Harris's Of Battle and Beauty: Felice Beato's Photographs of China (Santa Barbara, CA: Santa Barbara Museum of Art, 1999), 91-96. After him, the Westerners like Ernest Ohlmer, John Thomson, Calina Dluzbevskaya, and Thomas Child also took some photographs of the ruins.

186 The Chinese eyewitnesses recorded this second wave of destruction. For a list of these Chinese texts, see Fang Yujin 方裕谨 ed., “Yuanming Yuan bei fenlue ziliao zelu” 圆明园被焚掠资料择录 [Selected materials regarding the destruction of Yuanming Yuan by fire], in Yuanming Yuan 圆明园 [The Old Summer Palace], Volume 1, ed. Zhongguo Yuanming Yuan xuehui 中国圆明园学会 (Beijing: China Architecture & Building Press, 1981), 201-217. This article compiles some excerpts from six relevant Chinese texts.

187 For the assessment of the Old Summer Palace, see Liu Dunzhen 刘敦桢, “Tongzhi Chongxiu Yuanming Yuan shiliao” 同治重修圆明园史料 [Historical materials concerning the reconstruction of the Old Summer Palace under the reign of Emperor Tongzhi], Zhongguo yingzao xueshe huikan 中国营造学社汇刊 [Bulletin of the Institute for Research in Chinese Architecture] 4, no.2 (1933): 101-155. For the assessment of Qingyi Yuan, see Qinghua daxue jianzhu xueyuan 清华大学建筑学院.
190 The Boxer Rebellion was a violent grassroots movement against foreign and Christian presence in North China, which gained support from the Qing court in the hope of repelling foreign powers. The Legation Quarter of Beijing was under siege for 55 days, and the eight-nation alliance brought 20,000 troops to Beijing to lift the siege. The dowager and emperor fled, and uncontrolled plunder and execution followed.


192 Zhao Guanghua 赵光华, “Yuanming Yuan jiqi shu yuan de houqi pohua liju” 圆明园及其属园的后期破坏例举 [The four different periods of the remains of Yuanming Yuan and their general appearance], in Yuanming Yuan 圆明园 [The Old Summer Palace], Volume 4, ed. Zhongguo Yuanming Yuan xuehui 中国圆明园学会 (Beijing: China Architecture & Building Press, 1986), 12-17.


194 This was according to the “Articles of Favorable Treatment,” which stipulated the rights of the ex-emperor, the imperial family, and the minority groups. For the details, see Reginald Fleming Johnston, Twilight in the Forbidden City (London: Victor Gollancz Ltd., 1934), 96-98.

195 See, for example, Jiang Yikui 蒋一葵, Chang’an kehua 长安客话 [An account of the stay at Beijing] (Beijing: Beijing Ancient Books Publishing House, 1982).

196 Municipal government document, Beijing shi guanli Yihe Yuan shiwu su guanyu daotian dimu boguan jinguo gei Beijing shi zhengfu cheng ji shi zhengfu zhiling 北平市管理颐和园事务所关于稻田地亩拨管经过给北平市政府呈及市政府指令, 1928, J021-001-00003, Beijing Municipal Archives. This is the earliest detailed record of the farmlands in the imperial gardens that I can locate by far, and it was compiled when the warlord Feng Yuxiang (冯玉祥, 1882-1948) confiscated all the palace gardens as well as the farmlands outside the walls from the imperial household. Changchun Yuan was not included because it was leveled down to be a drill ground for military use in 1908.

197 Yihe Yuan guanli chu 颐和园管理处, Yihe Yuan zhi 颐和园志 [The Summer Palace annals] (Beijing: Beijing Forestry Press, 2006), 400.


200 The only exception happened when Feng Yuxiang took control of the region temporarily and some outsiders were recruited to do fishing in the lake in 1925. See Yihe Yuan guanli chu, *Yihe Yuan zhi*, 399.


203 Zhao, “Yuanming Yuan jiqi shu yuan de houqi pohua liju.”

204 Zhang, *Jingming Yuan shuiwang*, 139-143.


206 The Old Summer Palace was also designated as urban parkland in the 1950s, but it did not open to the public until 29 June 1988. Only the Jade Fountain Hill remains
closed until today since it was occupied by the Central Military Committee on 21 April 1949.


208 Ibid., 62.

209 This policy was announced by Li Gongxia (李公侠) at the first committee meeting of the Beijing Municipal Park Service in June 1950. See Dangdai Beijing yuanlin bianxie zu 《当代北京》园林编写组, Beijing yuanlin dashi ji (1949-1985) 北京园林大事记 (1949-1985) [Beijing park chronicle from 1949 to 1985] (1985), 3-4.

210 Ibid., 19.

211 Ibid., 43.

212 Yihe Yuan guanli chu, Yihe Yuan zhi (1750-1989), Volume 2, 39-76. See also Yihe Yuan guanli chu, Yihe Yuan zhi, 399.


On 28 March 1969, Chairman Mao specially required the Fragrant Hill Park (including the Imperial Hunting Ground and the Temple of the Azure Clouds) to plant fruit trees and oil crops instead of non-productive vegetation.

214 These data were according to an official survey of 1981. See Yuanming Yuan guanli chu 圆明园管理处, “Yuanming Yuan yizhi de xianzhuang” 圆明园遗址的现状 [The Present State of the The Old Summer Palace Site], in Yuanming Yuan 圆明园, Volume 1, ed. Yuanming Yuan guanli chu 圆明园管理处 (Beijing: China Architecture & Building Press, 1981), 20-23.


216 Ibid., 59.

217 Yihe Yuan guanli chu, Yihe Yuan dashi ji (1750-1898)]), Volume 2, 58.

218 Dangdai Beijing yuanlin bianxie zu, Beijing yuuanlin dashi ji (1949-1985), 110.


220 Dangdai Beijing yuanlin bianxie zu, Beijing yuuanlin dashi ji (1949-1985), 110.

Within the municipal park system, the watershed in management policy was a meeting in late 1978 among government officials from urban construction units, in which the former removal of horticultural flowers was criticized. Such criticism meant a decisive reevaluation of park function.

221 Yihe Yuan guanli chu, Yihe Yuan dashi ji (1750-1989), Volume 2, 85, 137. See also Yihe Yuan guanli chu, Yihe Yuan zhi, 84-92.

222 Xiong Xiling 熊希龄, Xiang Shan ciyou yuan fazhan shi 香山慈幼院发展史 [The history of the Fragrant Hill Charitable Home] (1927), 1-7

223 Xiang Shan ciyou yuan 香山慈幼院, Xiang Shan ciyou yuan linian shouzhi jingfei baogao shu 香山慈幼院历年收支经费报告书 [A report on the revenue and expenditure of the Fragrant Hill Charitable Home over the years] (1927), 4.

224 Xiong Xiling, Xiang Shan ciyou yuan fazhan shi, 6.

225 R.F. Johnston, Twilight in the Forbidden City (New York: Appleton-Century-Crofts, 1934). In Chapter 8, the author mentioned that the subsidy was never paid on schedule, and by 1924 several millions had behind in payment.

Xiong Xiling, *Xiang Shan ciyou yuan fazhan shi*, 86.

Ibid.

Yang Yuancheng 杨圆诚, *Xiang Shan ciyou yuan gaikuang* 香山慈幼院概况 [An overview of the Fragrant Hill Charitable Home] (Beijing: Fragrant Hill Charitable Home, 1938). The branch schools differed in program: (1) the 1st Branch School was for preschool education and organized children into eleven small families so as to nurture kinship-like bond; (2) the 2nd Branch School provided elementary education; (3) the 3rd Branch School and the Middle School offered middle school education as well as teacher training; (4) the 4th Branch School comprised of several agricultural and manufacturing grounds to provide practice opportunity to students; and (5) the 5th Branch School provided professional training like construction, printing, and weaving and tanning.

For the detailed information about the campus, see Beijing Xiang Shan ciyou yuan xiaoyou hui 北京香山慈幼院校友会, *Xiong Xiling yu Xiang Shan ciyou yuan* 熊希龄与香山慈幼院 [Xiong Xiling and the Fragrant Hill Charitable Home] (Tianjin: 南开大学 Nankai University, 2009).


Ibid. This album contains a large number of the old photos of the charitable home, of which there are many showing the individual buildings.

Such hostile attitude can be seen in the recent park annals compiled by the Fragrant Hill Park Administration Office. See Xiangshan gongyuan guanli chu, *Xiang Shan gongyuan zhi*, 4.

The charitable home was relocated elsewhere and finally restructured into a public middle school in 1973. When the committee moved out in 1952, the property became a public park, a new destiny that will be discussed in the sections that follow. See Zhonggong Beijing Shi Haidian Quwei Dangshi Yanjiu Shi 中共北京市海淀区委党史研究室, *Zhonggong zhongyang zai Xiang Shan* 中共中央在香山 [CCCPC at the Fragrant Hill] (Beijing: The Central Literature Press, 2003).

After the Boxer Rebellion, the Qing government agreed to pay an indemnity to the eight powers of the world, including the United States. President Theodore Roosevelt later found the indemnity was excessive, thus he obtained congressional approval in 1909 to reduce that payment by $10.8 million. But the fund was required to be used as scholarship for Chinese students to study in US. The Qing government then allocated Xichun yuan, an imperial property that escaped the destruction of 1860 and 1900, to set up this preparatory school. The faculty members for sciences were recruited from US. For the history of the Tsinghua College/University, see Qinghua daxue xiaoshi bianxie zu 清华大学校史编写组,


238 These temples include Biyun Si (碧云寺 the Temple of the Azure Clouds), Jingfu Si (静福寺 the Temple of the Quietness and Blessing), Wenquan Si (温泉寺 the Temple of the Hot Spring), and Jinshan Si (金山寺 the Temple of Golden Hill). See Beijing zhongfa daxue 北京中法大学, Beijing zhongfa daxue gaiyao ji zhangle 北京中法大学概要及章程 [Overview and statute of the Sino-French University at Beijing] (1927).

239 Xiangshan gongyuan guanli chu, Xiangshan gongyuan zhi, 380-383.

240 Beijing zhongfa daxue, Beijing zhongfa daxue gaiyao ji zhangle.

241 Ibid.

242 Shao Yong 邵勇, "Qingmo miaochan xingxue yundong yu huixue minbian" 清末庙产兴学运动与毁学民变 [The popular movement of turning temples into schools and its reaction at the end of the Qing Dynasty], Qinghai shehui kexue 青海社会科学 [Qinghai social sciences] 3 (2006): 129-132.

243 For the policies during the period of 1912-1927, see Guo Huaqing 郭华清, "Beiyang zhengfu de simiao guanli zhengce pingxi" 北洋政府的寺庙管理政策评析 [A comment on administration policy of temples by the Beiyang Government], Guangzhou daxue xuebao (Shehui kexue ban) 广州大学学报 (社会科学版) [Journal of Guangzhou University (social science edition)] 1 (2005): 23-43. For the policies during the period of 1927-1937, see Chen Jinlong 陈金龙, "Cong miaochan guanli kan Nanjing guomin zhengfu shiqi de zhengjiao guanxi" 从庙产管理看南京国民政府时期的政教关系——以1927—1937年为中心的考察 [A study of the relationship between religion and politics in the period of the Nanjing national government], Huanan shifan daxue xuebao (Shehui kexue ban) 华南师范大学学报 (社会科学版) [Journal of South China Normal University (social science edition)] 5 (2006): 108-116, 121, 164.

244 For the efforts of the Taoists to revive the religion, see Kristofer Schipper 施舟人, "Daojiao zai jindai zhongguo de bianqian" 道教在近代中国的变迁 [Taoism in modern China], in Zhongguo wenhua ji yin ku 中国文化基因库 [The gene pool of Chinese culture], ed. Kristofer Schipper (Beijing: Beijing University Press, 2002), 146-162. For that of the Buddhists, see Xi Wuyi 习五一 and Deng Yibing 邓亦兵, Beijing tongshi 北京通史 [General history of Beijing], Vol. 9 (Beijing: China Bookstore, 1994), 422-424.
245 Ji Penghui 吉朋辉, “Tianjin jiefang hou de ‘miaochan xingxue’” 天津解放后的“庙产兴学” [The movement of turning temples into school at Tianjin after 1949],
Tianjin dang’an 天津档案 [Tianjin archives] 1 (2013): 56, 61. In 1950 there were 132 temples, 29 of which were occupied by schools. All temples had 2080 rooms in total, 562 of which were used for education. See Ci Xue 慈学 and Zhou Ming 周敏, “Wo jingli de liangci fozhijiefang” 我经历的两次佛教“解放” [The two Buddhist “liberations” I experienced], Wuhan wenshi ziliao 武汉文史资料 [Wuhan literature and history materials] Z1 (2011): 138-145.
246 Xiong, Xiang Shan ciyou yuan fazhan shi 象山城由圆发展史, 86.
247 Beijing ligong daxue xiaoshi congshu 中法大学史料续编 [The historical materials of the Sino-French University (a sequel)] (Beijing: Beijing Institute of Technology Press, 1997), 140-144.
248 Li Shizeng 李石曾, Li Shizeng xiansheng wenji 李石曾先生文集 [Anthology of Mr. Li Shizeng], Volume 2 (Taipei: the KMT Central Committee, 1980), 138-145, 157-166. He particularly mentioned that the hot spring at the Temple of Hot Spring contained radium that was supposed to be good for fertility and cancer treatment.
252 Li Shizeng 李石曾, “Zuzhi Lumoke xueyuan zhi jingguo yu xiwang” 组织陆谟克学院之经过与希望 [The history and hope of the establishment of the Lamarck School], Zhong Fa ban yue kan 中法半月刊 [The Sino-French bi-monthly] 2 (1925).
253 Municipal government document, Ben hui jieguan Xi Shan Lingguang Si de baogao he youguan tianran liao yang yuan zuyue ji baogao shu deng jian 本会接管西山灵光寺的报告和有关天然疗养院租约及报告书等件, 1951, 098-001-00037, Beijing Municipal Archives.


258 But with the rising popularity of the seashore beaches and hills at Beidaihe (北戴河), many foreigners left the Western Hills by 1917 for these other summer resorts. See Thomas Cook, *Peking and the Overland Route* (London: Cook & son, 1917), 90.
Tian Shufan 田树藩, Xi Shan mingsheng ji 西山名胜记 [An account of the scenic spots at the Western Hills] (Beijing: Zhonghua Bookstore, 1935).


One was Luyan Jingshe (鹿岩精舍) built by Zhou Zhaoxiang (周肇祥) in 1918 and the other was Yejia Xiaoyuan (叶家小院) by Ye Shaohua (叶绍华) in 1939. See Beijing zhiwu yuan guanli chu 北京植物园管理处, Beijing zhiwu yuan zhi 北京植物园志 [Beijing Botanical Park annals] (Beijing: China Forestry Press, 2003), 147, 164-174.

For the sanatoria in the Summer Palace, see Yihe Yuan guanli chu, Yihe Yuan zhi 北京颐和园管理处, 北京颐和园志, 403. For others, see Wang, Beijing weisheng shiliao: yixue jishu pian 1949-1990, 377-380.


Jean Francois Gerbillon (French, 1654-1707) and Thomas Pereira (Portuguese, 1645-1708) were the earliest, visiting the Cozy Spring Palace (畅春园) under the reign of Emperor Kangxi (康熙). But the most famous are Joseph Castiglione (1688-1766), Jean Denis Attiret (1702-1768), and Michel Benoist (1715-1774). Attiret’s 1743 letter to M.d’ Assaut was the most influential of its kind before 1860, and it was first published in French in 1749 and later translated into English in 1752. See Jean Denis Attiret, A Particular Account of the Emperor of China’s Gardens near Pekin (London: printed for R. Dodsley; and sold by M. Cooper, 1752). For more information about the Western missionaries relevant to the introduction of Chinese gardens to Europe, see Chen Zhihua 陈志华, Zhongguo zaoyuan yishu zai Ouzhou de yingxiang 中国造园艺术在欧洲的影响 [Chinese garden design’s influence in Europe] (Jinan: Shandong Pictorial Publishing House, 2006): 19-31. See also A. Reichwein, China and Europe: Intellectual and Artistic Contacts in the Eighteenth Century (London: Kegan Paul & Co., 1925), 111-126.


D. Harris, Of Battle and Beauty: Felice Beato’s Photographs of China (Santa Barbara, CA: Santa Barbara Museum of Art, 1999), 70-99.
The works of these earlier photographers have been mostly published in English and Chinese. For an introduction to these works, see Thiriez, Barbarian Lens.


Ibid., Vol. IV, Plate XVIII-XIX.

C.B. Malone, History of the Peking Summer Palaces under the Ch'ing Dynasty (Urbana: University of Illinois Press, 1934).


Douglas Kerr and Julia Kuehn, "Introduction", in A Century of Travels in China: Critical Essays on Travel Writing from the 1840s to the 1940s, ed. Douglas Kerr and Julia Kuehn (Hong Kong: Hong Kong University Press, 2007), 5.


Liang Sicheng finished the comprehensive survey of Chinese architecture in 1944, which was later included in his complete anthology. See Liang Sicheng 梁思成, Zhongguo jianzhu shi 中国建筑史 [History of Chinese architecture], in Liang Sicheng quanji 梁思成全集 [Anthology of Liang Sicheng], Volume 4, edited by Wang Shiren 王世仁 and Yang Hongxun 杨鸿勋 (Beijing: Intellectual Property Publishing House Co., Ltd., 2006), 1-222.


See Nicholas Belfield Dennys, Notes for Tourists in the North of China (Hongkong: A. Shortrede & Co., 1866); Archibald Fisher, Guide to Peking (Tientsin: Tientsin Press, 1904); Emil Sigmund Fisher, Guide to Peking and Its Environ (Tientsin: Tientsin Press, 1909); Thomas Cook, Peking and The Overland Route (Shanghai: Thos. Cook & Son, 1917); Lewis Charles Arlington and William Lewisohn, In Search of Old Peking (New York: Paragon Book Reprint Corporation, 1935); Ma Yangzhi 马洋志

284 Nicholas Belfield Dennys, *Notes for Tourists in the North of China* (printed by A. Shortrede, 1866), 9-18.


286 Ibid., 25.


288 Cook, *Peking the Overland Route*, 84-85.


292 Fisher, *Guide to Peking and Its Environs*, 13. This might be because the Empress Dowager Cixi died in 1908, and her successors no longer left the Forbidden City to live in the summer palace.


294 Municipal government document, *Beiping tebie shi zhengfu guanyu yuyouquan danwei de laiwang hanjian* 北平特别市政府关于接收颐和园与有关单位的来往函件, 1928, J001-004-00006-00008, Beijing Municipal Archives;


298 Ibid., 404, 406.

299 Cook, *Peking and the Overland Route*, 86.


301 For the brief information about the Sweet Dew Hotel, see Xiang Shan gongyuan guanli chu, *Xiang Shan gongyuan zhi*, 299. For that of the Western Hills Hotel, see Zhengzie Beijing shi Shijing Shan qu weiyuan hui 政协北京市石景山区委员会, *Shijing Shan, Badachu zhuanyi* 八大处专辑 [A special anthology of the Eight Great Sites] (2007), 341.


303 Arlington was an American who had served in the Customs and Postal Administrations since his arrival in China in 1879, and Lewisohn was a British Army officer turned journalist. See Arlington and Lewisohn, *In Search of Old Peking*, Foreword.


306 Yihe Yuan guanli chu, *Yihe Yuan zhi* (1750-1898), 12-17.


309 Yihe Yuan guanli chu, *Yihe Yuan zhi*, 404.
310 Zhonggong Beijing Shi Haidian Quwei Dangshi Yanjiu Shi, Zhonggong zhongyang zai Xiang Shan, 3-12.
311 Municipal government document, Ben hui guanyu diaocha Xi Shan Badachu ji Tuigu shanchang de baogao 本会关于调查西山八大处及退谷山场的报告, 1950, 098-001-00011, Beijing Municipal Archives.
312 Municipal government document, Ben hui guanyu diaocha Xi Shan Badachu ji Tuigu shanchang de baogao 本会关于调查西山八大处及退谷山场的报告, 1950, 098-001-00011, Beijing Municipal Archives.
313 The reopened sites include: the Summer Palace on 10 April 1949, the Temple of the Azure Clouds on 12 September 1954, the Temple of the Reclining Buddha on 1 October 1955, the Eight Great Sites on 15 May 1956, and the Imperial Hunting Ground on 1 May 1957 (renamed as the Fragrant Hill Park). See Dangdai Beijing yuanlin bianxie zu, *Beijing yuanlin dashi ji* (1949-1985), 2, 17, 23, 31. The temple of Black Dragon and the Jade Fountain Hill are still closed today, and the Temple of Hot-spring and its adjacent sanatorium were destroyed in 1946 during the civil war.
318 Yihe Yuan guanli chu, *Yihe Yuan zhi*, 392-393.
319 Ibid., 359.
320 Xian Shan gongyuan guanli chu, *Xiang Shan gongyuan zhi*, 278-279. See also *Beijing zhiwu yuan guanli chu, Beijing zhiwu yuan zhi*, 190.
322 Ibid., 118.
324 Song Qing ling 宋庆龄 et al., “Baohu, zhengxiu ji liyong Yuanming Yuan yizhi changyi shu” 保护、整修及利用圆明园遗址倡议书 [A proposal on the preservation, restoration and utilization of the Yuanming Yuan site], in *Yuanming Yuan* 圆明园
325 Yuanming Yuan guanli chu, “Yuanming Yuan yizhi de xianzhuang.”
326 The worry about substantial investment was best expressed by Duan Yunhuai (段运怀), and the worry about the erasure of historical evidence was best expressed by Ye Tingfang (叶廷芳) and Chen Zhihua (陈志华). See Wang Daocheng 王道成 ed., Yuanming Yuan chongjian da zhengbian 圆明园重建大争辩 [The intense debate on the restoration of the Old Summer Palace] (Hangzhou: Zhejiang Ancient Literature Press, 2007), 16, 99-110.
327 Ibid., 15-17.
328 Wong, A Paradise Lost, 193-194.
329 Beijing zhiwu yuan guanli chu, Beijing zhiwu yuan zhi, 148-149. See also Mao Guohua 毛国华, “Tantan Xiang Shan Qinzeng Dian fujian sheji—jianlun Qingdai guanshi jianzhu jueyou de lixue tezheng” 谈谈香山勤政殿复建设计—兼论清代官式建筑结构的力学特征 [A talk on the reconstruction of the Qinzeng Hall at the Fragrant Hill—concurrently on the mechanical features of the Qing official architecture structure], Gujian yuanlin jishu 古建园林技术 [Traditional Chinese architecture and gardens] 3 (2008): 63-67, 73.
331 Xiang Shan gongyuan guanli chu, Xiang Shan gongyuan zhi, 97-107, 293-301.
334 See the official website of Beijing Municipal Administration of Cultural Heritage, as accessed September 23, 2014, www.bjww.gov.cn/wbsj/bjwbzw.htm. In comparison, the period from 1949 to 1978 witnessed only seven at the municipal level and one at the national level.
336 First drafted on 30 June 1977, the document was amended and adopted by the Committee in 1978, and the requirement concerning buffer zone is in Paragraph 28.
337 Buffer zone was further categorized into five types: Type 1 forbid any construction except plantings and fireproof corridors; Type 2 allowed buildings below 3.3 meters high and 40% density, which was best designed in the form of traditional courtyard; Type 3 allowed new buildings below 9 meters high and 35% density, requiring all buildings to be in harmony with the heritage site in terms of form, scale, and color; Type 4 allowed new buildings below 18 meters high, but
buildings adjacent to heritage property or aside roads and views leading to that property should be in harmony with the property in terms of color, scale, and form; and Type 5 was to be designated for special heritage sites. See Beijing shi zhengfu 北京市政府, *Beijing shi wenwu baohu danwei baohu fanwei ji jianshe kongzhi didai guanli guiding* 北京市文物保护单位保护范围及建设控制地带管理规定 [Beijing municipal ordinance concerning the protection zone and buffer zone for cultural heritage protection unit], drafted in 1984, issued in 1987, and amended in 2007, accessed September 23, 2014, [http://www.bjww.gov.cn/2010/11-1/1288598605312.html](http://www.bjww.gov.cn/2010/11-1/1288598605312.html).


343 L. Richard, *Comprehensive Geography of the Chinese Empire and Dependencies* (Shanghai: T’usewei Press, 1907), II-III.


345 Ibid.


350 Choay, *The Invention of the Historic Monument*. 
5. From Reforestation to Forest Tourism

A contemporary visitor to Beijing’s Western Hills will find sites of tourist interest like religious temples and summer palaces embedded in verdant settings. The sloping lands within tourist spots like the Longevity Hill and the Jade Fountain Hill and those beyond are mostly covered with abundant trees, shrubs and grasses. Although the urban sprawl has extented to the Western Hills and encroached a few of its foothills, it has not yet taken over the rugged higher terrain where there is more vegetation than architecture. Because the forest exists more like an ahistorical background in comparison to the adjacent temples and palace gardens, it appears to have always been there and thus escapes historical contemplation (Figure 5.1).

Figure 5.1 The east part of the Western Hills (by author, June 2013)
However, this thick blanket of vegetation is actually a relatively recent development. In the same region in the early twentieth century, visitors saw a rather different landscape. In a photograph taken by Ernst Boerschmann (1873-1949) during his stay in Beijing in the 1910s, the slopes north of the Imperial Hunting Ground were completely treeless except a few plots like the Temple of the Azure Clouds and the Temple of the Reclining Buddha (Figure 5. 2). Although the German architect avoided mentioning such bareness in his writing so as to protect his argument about the nature-human unity in Chinese architecture, his image reveals that, as far as vegetation is concerned, the Chinese relationship to the land at the time was far from harmonious.351

Figure 5. 2 Boerschmann. Peking, Si shan, Pi yun szæ, Prov. Chihli. Source: Ernst Boerschmann. Picturesque China (New York: Brentano’s, 1923), 14. The photograph was taken during the period of time from 1902-1909. The long grove in the foreground was the Temple of the Azure Clouds, and the square grove above was the Temple of the Reclining Buddha.
A photograph of the Jade Fountain Hill, taken by the Swedish art historian Osvald Sirén (1879-1966) in 1921-1922, shows a similar scene: the upper slopes mostly lacked vegetal cover (Figure 5. 3). The bareness that is evident in Boerschmann and Sirén’s images did not merely exist in a few individual spots of the Western Hills. When recalling her excursions to the hills west of Beijing from 1933 to 1946, the German photographer Hedda Morrison (1908-1991) wrote:

The hills were sadly bare, as the original tree cover had long been destroyed. The poverty of the peasants meant that anything combustible was collected for fuel. No bush could achieve any size before it was cut down and even rank grass and other herbage was ripped up and carried away to the villages. Some trees were grown on private land but the only substantial trees to be seen grew where they were protected, especially around the temples.352

Morrison’s recollection testifies to the widespread deforestation of the Western Hills and other sloping lands of Beijing in the early twentieth century. The barrenness witnessed by the early visitors was in great contrast to the verdure seen today.

This chapter begins with a key question: how was the former barrenness transformed into the contemporary verdure? The chapter begins with the motives of reforestation efforts at Beijing’s Western Hills, placing it within the environmental and socio-economic context of post-1912 China. As one of the earliest forest plantations of the country, the Western Hills project reflected a much larger movement to reforest China, in which people saw the forest as a primary tool for preventing natural disasters, increasing agricultural and timber production through wise management, and improving the living environment. In this process, the Western Hills was important because it served as a general model for the movement as a whole. Because the reforestation movement sought to manage ecologically sensitive and infertile lands on a rational basis, the vegetal
changes of the Western Hills became associated with new ideas about national land use in modern China. This ideological association is examined in the first section of this chapter.

Figure 5.3 Osvald Sirén, A view of Yuquan Shan with the pagoda on the hill. Source: Osvald Sirén, The Imperial Palaces of Peking (Paris: G. Van Oest, 1926), Plate 231. The photograph was taken during the period of time from 1921 to 1922.
From there, the chapter then analyzes the specific challenges of reforesting of the Western Hills and the strategies that had been tested and applied during the period from the 1910s to 1950s. Hillsides pose unique problems for reforestation because of their topographical and soil constraints, and the wish to green such lands could not be fulfilled without appropriate technical and organizational methods. Due to its geographical location, the Western Hills Forest Plantation had particular bearings on hillside reforestation in North China since the early 1910s, and what began there on a trial and error basis later became the guiding system in the other rugged terrains of the same macro-region. Meanwhile because the Western Hills featured so many places of interest and was also in close proximity to a metropolis, its reforestation was laden with more purpose and required more complicated design. To designate such land as a forest reserve meant the exclusion or restriction of other uses like farming, grazing, and housing construction. The development of the Western Hills Forest Plantation thus was also a process of changing the site’s former pattern of land use. Such complexity as well as its impact on the physical landscape is the topic of the second section of the chapter.

The significance of Beijing’s Western Hills lies in the fact that it was among the earliest forest plantations to be designated as Forest Park in China since the 1980s. More and more reforested slopes of the Western Hills without historical or artistic attractions, especially those adjacent to the urbanized area, have been modified to attract tourists with carefully produced scenic woods, winding trails, and panoramic outlooks. This transition from Forest Plantation to Forest Park, which is to say from productivity to pleasure, exemplifies the nationwide commodification of man-made forests at the time. This is a significant phenomenon for understanding the ways in which landscape is instrumental in
contemporary culture. Therefore, the last section of the chapter focuses on this transition, examining its driving forces, design strategies, and social obstacles in relation to the post-1980 conditions of China and the world.

**Why the Western Hills Were Reforested**

The origin of reforestation planning for the Beijing Western Hills is recorded in a document submitted to the president of the Chinese Republic on 17 July 1915, in which the Ministry of Agriculture and Commerce reported the status of reforestation projects nationwide since 1912. The document first points out that China suffered from frequent river flooding and serious dependence on timber importation, both of which had a disastrous effect upon the finances and productiveness of the nation. Meanwhile large tracts of land lay barren and wasted on hills and mountains. For the purpose of environmental safety and timber supply, it was imperative to make those wastelands productive by planting trees. The document then mentioned that the Ministry set up the Forestry Experiment Ground (林艺试验场) at the Temple of Heaven in 1912, which was complemented by a forest plantation established at the Western Hills Forest one year later. Every spring the officials of the ministry went to the Western Hills to hold tree-planting ceremonies in the hope of increasing public awareness of the importance of trees. Moreover, the Ministry planned to set up three more national plantations at the Yellow River valley, the Yangtze River valley, and the Pearl River valley, which were complemented by others managed by provincial governments (like that in Northeast China) and NGOs (like Zijin Shan 紫金山 in Nanking).353 Accordingly the Western Hills
was both a testing ground for forestry and a symbolic model of the national reforestation campaign.

The relationship of hillside with forest, natural disaster, and economy was also discussed in an article by Hu Junyuan (胡浚源) that appeared in the bio-monthly journal of the Sino-French University in 1927. The author was the director of the Third Testing Ground for Agriculture and Forestry at the Golden Hill northwest of the Western Hills, one of the three testing grounds established by the university in the vicinity of the Western Hills in the early 1920s. Lamenting the severe hillside deforestation of China, the author criticized the Chinese blindness to the functions of mountain forests for purposes other than wood and fruit production; he emphasized their utility for flood and drought control, climate improvement, and prevention of both soil erosion and sediment deposition on riverbeds. But, at the same time, he apparently also cared about the economic uses of forests, emphasizing that hillside reforestation could produce large amounts of timber after ten years, and that tree flowers could feed bees. To achieve a balance, the author thus proposed to combine long-term scenic forests and short-term economic forests. The ways that hillside reforestation had been justified here were apparently identical to that of the Ministry of Agriculture and Commerce.

However, the above texts did not provide address two important questions. First, how serious was China’s environmental and economic hardship and its vulnerability to natural disaster? This was the precondition for the birth of the Western Hills Forest Plantation and the base upon which reforestation was originally justified. Without this information, we cannot fully understand the urgency of the problem that the founders of the Western Hills Forest Plantation attempted to solve. Second, how exactly did people of
the time think that reforestation could help solve that problem, and how did they believe extensive work in reforestation should be carried out? These questions are key to understanding why the Western Hills became a principal ground for the reforestation campaign. Clearly the proximity of the site to the capital city of the time could attract more attention and thus exert a larger influence, but this does not explain why this particular location took precedence over others also in Beijing and its environs.

To know the typology, magnitude, and frequency of natural disaster in China that occurred prior to or contemporary with the birth of Western Hill Forest Plantation, one can refer to the government records as well as local chronicles from the Qing Dynasty (1644-1911) to the 1950s. The Qing period witnessed 1121 severe natural disasters nationwide including 192 floods and 201 droughts, and the period of 1912-1937 witnessed 77 severe disasters including 24 floods and 14 droughts. In particular, during the five years (1908-1912) right before the creation of Beijing’s Western Hills Forest Plantation, flooding actually happened every year mostly in major basins like the Yellow River and the Yangtze River. The situation was even worse in North China where the Western Hills lies. During the 268 years of the Qing Dynasty, 228 years witnessed some kinds of natural disaster in this region, and flooding and drought were the most frequent and destructive. For example, among the 129 floods of the period, the five largest ones that happened respectively in 1653, 1668, 1801, 1890, and 1893 not only directly caused serious life and property loss as well as infrastructural damage, but also led to large-scale homelessness and famine in the aftermath. They were mostly caused by summer rainstorms, which brought flash torrents that rushed down mountains, overflowed or even broke banks of downstream river channels, and finally flooded human settlements on
flatland. Worse still, when there was no flood, there was drought instead.\textsuperscript{358} During the period from 1912 to 1956, twenty-three years witnessed floods and the seven largest happened in 1913, 1917, 1924, 1925, 1929, 1939, and 1956, all of which were caused by mountain torrents during summer season.\textsuperscript{359} In a word, the frequency of natural disaster in China was both high and increasing. The insecure national situation described in the Ministry of Agriculture and Commerce’s 1915 report had not been an exaggeration, and the need to cope with it was imperative.

China’s dependence on timber import was another problem mentioned by the Ministry that deserves further clarification. As an issue of international trade, it is best reflected in the statistic data of the China customs from the late Qing to the early Republic. The percentage of timber value in that of gross import goods during the period of 1912-1936 went up steadily, with only a few fluctuations in years 1915, 1917, and 1921. In 1912 the percentage was only 0.53%, but it had risen to 3.07% by 1936. In particular, North China demanded higher timber imports. The custom records of of Tianjin, the major port city of North China located only eighty miles from Beijing, show generally higher percentages of timber value in that of gross import goods in comparison to that of national average from 1928 to 1937, and in 1934 timber was the second largest type of import goods. The major sources for imported timber included Russia, the United States, and Japan.\textsuperscript{360} Whether such particularly high demand for timber in North China had any bearing on the selection of Beijing’s Western Hills an earliest forest plantation is not known, but it reveals that timber production in some of the most populous regions of China was far from self-sufficient in the early twentieth century.
The problem of river flooding and timber shortage in early twentieth-century China was undoubtedly serious, but how did people of the time understand that reforestation was an appropriate solution? An important source of information in this regard is the speeches and writings of the leading political figures who had been influential in public policy making. Dr. Sun Yat-sen (孙中山, 1866-1925), the first president and founding father of the Republic of China, was a pioneering promoter of reforestation in modern China. He noticed as early as the 1890s that hills all over the country were treeless because peasants cut all the plants, and that, as a corollary, frequent flooding greatly hampered the agricultural production on flatlands below. Sun became truly concerned that such inefficient use of national land contributed to China’s poverty and backwardness. Three decades later in his speech about the fundamentals of national development, Sun pointed out that flooding happened because there was no forest on the sloping lands to conserve and detain rainstorm runoff, thus excessive water rapidly rushed down and caused inundations in lower reaches of rivers. He thus claimed that it would be of little use simply to reinforce riverbanks and dredge riverbeds; instead the best method was to plant trees on sloping lands. By doing this, rainfall during the dry season could also be increased because plants would put water stored during monsoon season back in the air in the form of transpired moisture. For these reasons Sun listed hillside reforestation as one of the seven major ways of increasing food production and ultimately improving the livelihood of the Chinese.

Dr. Sun Yat-sen didn’t draft operational guidelines for reforesting China’s rugged terrains, but he did make some relevant suggestions in his project “to develop a new market in China big enough both for her own products and for products from foreign
countries.” In that project, “reforestation in Central and North China” was listed as one of the ten programs of top priority. The geographical focus indicated not only that Central and North China was then the most deforested region, but also that it was one of the most populated that most needed protection. Although Sun did not directly link reforestation to timber supply, his concern about the latter was revealed in the scheme for the railway system, in which he specifically mentioned the abundance of virgin forest in Manchuria, Xinjiang, and Southwest China as localized resources that would justify the extension of railways from seaports to remote inlands. Additionally, in the scheme for food industry, the visionary recommended a scientific topographic and geological survey of national land:

When the survey work is done and the land of each province is minutely mapped out, we shall able to re-adjust the taxation of the already cultivated and improved land. As regards the waste and uncultivated lands, we shall be able to determine whether they are suitable for agriculture, for pasture, for forestry, or for mining. In this way, we can estimate their value and lease them out to the users for whatever production that is most suitable.

What Sun proposed is essentially a national land reform rationalized by scientific analysis, because to determine the suitable use of a particular land meant the exclusion or restriction of possible alternatives. Given Sun’s understanding of flood and drought disasters, lands most “suitable for forestry” would undoubtedly be hills and mountains.

Some early Chinese scholars went further to discuss the direct economic benefits of planting trees on slopes. Chen Zhi (陈植, 1899-1989), a founder of landscape architecture and forestry in modern China, offered the clearest explanation in this regard. With the steepness of slope as the indicator, Chen defined two types of land suitable for forestry: 1) the “absolute forest floor” (above 20 degrees) was of little productivity for
farming because its soil and fertilizers could too easy to be eroded; 2) whereas the “relative forest floor” (below 20 degrees) generated more economic returns when it was planted with trees instead of crops. Most hills and mountains fell into the two categories. Regretting the Chinese neglect of the economic potentials of such land, Chen argued that the supply of wood and fuel produced by tree planting on hillsides would be as, or more, lucrative than farming. Hillside reforestation thus went beyond its ecological function and became an economic undertaking similar to farming and mining that made land profitable.

William Forsythe Sherfesee (American), an American official of Forestry in the Philippine Islands, witnessed an early case of hillside reforestation as a direct economic undertaking during his visit to Central China in 1915. Sherfesee first described the landscape as he first saw it:

To the writer at least the most astonishing fact revealed by these investigations is the great extent of excellent land lying waste on hill and mountain. In many places the population is overcrowded and desperately poor, yet in the immediate vicinity, rising perhaps from the very outskirts of the overcrowded towns and villages, are fertile but unused hills, excellently suited for forest growth. People like Ernst Boerschmann and Hedda Morrsion had seen something similar in Beijing’s Western Hills. Sherfesee then enthusiastically introduced the reforestation work on Purple Mountain at Nanjing initiated by Joseph Bailie (1860-1935), an American who went to China as a Protestant missionary. In the aftermath of a large-scale flooding, Bailie attempted to alleviate the suffering of the local people by employing them to farm the rich land at the base of the mountain, but he soon found such areas were limited and the great body of land on the upper slopes was unfit for intensive use due to the shallow soil and rock-strewn surface of the sloping land. Bailie thus turned to forestry as a
mountain resource that could be exploited, thereby providing a sustainable livelihood for farmers by producing fuel and timber that could be sold. For the purpose of obtaining more Chinese sympathy and cooperation, he also established a school of forestry in the University of Nanking as well as the Colonization Association of the Republic of China. The fact that both influential and ordinary Chinese strongly supported these undertakings made Sherfesee subscribe to the idea of “the Reforestation Movement in China” along modern lines, which would bring wood, one of the essential elements of industrial civilization, to China.\textsuperscript{368} Sherfesee’ observation testified to a new understanding of the economic value of sloping lands in republican China that gained momentum due to both the transnational flows of modern forestry ideas and the domestic social crisis.

From the perspective of either disaster prevention or economic production, the advocacy for hillside reforestation mentioned above offered a national context in which the significance of Beijing Western Hills can be fully understood. Such significance includes two dimensions. On the one hand, this site was primarily a barren rugged terrain, and its reforestation was critical to the environmental safety and economic prosperity of Beijing, one of the most populated urban areas in China. On the other hand, because of the proximity to the capital city, the experiment in the Western Hills had the potential to serve as an agent in the propaganda of tree planting in general and an inspiration to larger projects of hillside reforestation throughout the new republic. Thus the Western Hills derived its importance from both its topographical and geographical features. In fact, most other major forest plantations during the republican period were likewise situated on hills and mountains in the vicinity of major cities ranging from national capital to provincial capital (Table 5. 1). It was also due to this close relationship between hillside
and city that the status of the Western Hills Forest Plantation changed along with that of Beijing. Two years after the KMT Party overthrew the Beiyang Government and relocated the national capital to Nanjing in 1927, a new work called the Central Model Forest District (中央模范林区) was established to manage five hills and one stream valley outside the new capital. Beijing was thus replaced as the national center of reforestation propaganda and experiment. But the northeast portion of the main body of the Western Hills remained as one of the two national forest plantations under direct administration of the central government.

Table 5. 1 Major reforestation works in Republican China before 1937. Source: Chen, Zhongguo Senlin Shiliao, 55-56, 139-141, 153-171.

<table>
<thead>
<tr>
<th>Initial Name</th>
<th>Location</th>
<th>Time</th>
<th>Administration</th>
<th>Site Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Qingdao Forest Plantation</td>
<td>Qingdao</td>
<td>1898</td>
<td>The German Imperial Department of the Navy</td>
<td>Lao Mountain (崂山), Li Village (李村) urban Qingdao</td>
</tr>
<tr>
<td>2 Western Hills Forest Plantation</td>
<td>Beijing</td>
<td>1913</td>
<td>The Beijing Government</td>
<td>Western Hills</td>
</tr>
<tr>
<td>3 National Forestry Experiment Plantation</td>
<td>Changqing</td>
<td>1915</td>
<td>The Beiyang Government</td>
<td>Foothills of Mount Tai, such as Five-Peak Hill (五峰山), Gu Hill (崮山)</td>
</tr>
<tr>
<td>4 Purple Mountain Forest Plantation</td>
<td>Nanjing</td>
<td>1915</td>
<td>The Colonization Association of the Republic of China (The Nanjing Branch)</td>
<td>Purple Mountain (紫金山, 700 acres)</td>
</tr>
<tr>
<td>5 Jiangsu Province Educational Forest</td>
<td>Nanjing</td>
<td>1916</td>
<td>Jiangsu Province Educational Groups</td>
<td>Old Hill (老山)</td>
</tr>
<tr>
<td>6 3rd Forestry Experiment Plantation</td>
<td>Wuhan</td>
<td>1920</td>
<td>The Beiyang Government</td>
<td>Hong Hill (洪山)</td>
</tr>
<tr>
<td>6 Central Model Forest District</td>
<td>Nanjing</td>
<td>1929</td>
<td>The KMT Government</td>
<td>Silver Phoenix Hill (银凤山), Hot Springs Hill (汤山), Bell Stream (钟溪), Little Jiuhua Hill (小九华), Dragon King Hill (龙王山), Bull Head Hill (牛首山)</td>
</tr>
</tbody>
</table>

However, in addition to the concerns for safety and economy with respect to the reforestation of the Western Hills, the years before the World War II also witnessed the
rise of aesthetic concern associated with the work. Emerging as early as 1927 in Hu Junyuan’s proposal for combining scenic forests and economic forests, this concern was best manifested in the initiatives of the municipal government of Beijing after the KMT government shifted the national capital to Nanjing. During this period, the former state-run plantation in Beijing no longer received enough funds for further expansion, and instead it was the newly established municipal government that became a new promoter of hillside reforestation at the Western Hills. In the scheme of 1933 for Building the Beijing Tourist District, the creation of scenic forests on the Western Hills was an integral part of historic preservation, and its cost accounted for about one fourth of the total budget for managing the Summer Palace, the Jade Fountain Hill, the Imperial Hunting Ground, and the Eight Great Sites. As the first step, the municipal government made a detailed plan in 1935 for reforesting the Longevity Hill (within the Summer Palace) within two years and the Jade Fountain Hill within four years. The fact that the two sites were the most popular tourist spots in the region and the closest hills to the old city revealed the primary motivation for tree planting.

However, the works of both the central and municipal governments on the Western Hills were soon interrupted by the outbreak of the Second Sino-Japanese War (1937-1945). In 1940 the Japanese established the North China Forest Service (华北造林署) and designated the Western Hills as one of twenty working districts. After the Pearl Harbor attack in 1941 escalated the war’s scope, several Japanese civic groups emerged to assist their government in reforesting North China by doing experiments, making plans, or directly carrying on the undertaking. The driving force behind all these efforts was clearly stated in the beginning of a thirty-year plan for reforesting the
entire North China made by the North China Reforestation Association in 1944. First, the
undertaking was to increase timber supply for manufacture and construction relevant to
army, transportation, and safety. Second, it was to stem the communist tide in rural areas
because tree planting could improve the environment and secure agricultural production,
thereby preventing the dissatisfaction of the peasants. This understanding of the
function of hillside reforestation was surprisingly identical to that of the Chinese before
WWII, although different with respect to the ultimate goal. The ideas of modern forestry
had been already well received around the globe in the first half of the twentieth century,
and regardless of who seized China, their methods for handling the Western Hills and
other sloping lands were the same.

It was for this reason that the KMT government resumed the job in the years
following WWII. After a visit to Beijing on 18 December 1945, Jiang Jieshi (蒋介石,
also spelled as Chiang Kai-shek according to Wade-Giles system of transcription), the
leader of the KMT Party, gave instructions to plant trees on the slopes surrounding the
Temple of the Azure Clouds (碧云寺). The next year the Central Forestry Laboratory
(中央林业实验所) took over the Western Hills as its major testing ground in North
China. At the request of the Ministry of Agriculture and Forestry to make ten-year
plans of reforestation for all parts of the country in 1947, the laboratory chose the Jade
Fountain Hill and the main body of the Western Hills as the demonstration grounds for
North China, specifying information like area, time limit, tree species, labor force, and
expenditure. This was the first comprehensive scheme to offer detailed instructions for
reforesting almost the whole of the Western Hills. Although both the Jade Fountain Hill
and the main body projects took into consideration factors like disaster prevention,
economic production, and scenic beauty, the former stressed primarily aesthetics whereas the latter emphasized safety. This was probably because of the Jade Fountain Hill’s history as a former imperial garden and its proximity to the Summer Palace.

However, after 1953 the pursuit of scenic beauty was extended to the entire main body of the Western Hills. In a work summary of October 1953, the Municipal Bureau of Agriculture and Forestry, restructured in 1949 by the communist party, proposed that the forest on the Western Hills should be managed primarily as a place of scenic beauty because it would be an integral part of urban Beijing in the near future. Even though, as a type of urban forest, it still served to provide environmental safety, it should do so in a scenic way. Two years later, the Municipal Forestry Survey Team (北京市林业勘测队) drew up the final three-year plan for planting trees all over the Western Hills, the primary objective of which was to create a scenic forest that might be further turned into a forest park in the future. Emphasizing the site’s proximity to the city and the abundance of historical monuments and modern sanatoria, the team claimed that the project would serve people’s recreational demands and meanwhile improve the local environment and climate. Given that the year 1953 was the beginning of the First Five-Year Plan (1953-1957) in China, the change in the aim of reforestation might be largely due to the officials’ expectation that the capital city would be greatly expanded (see Chapter Three, Section Five).

The three years from 1955 to 1957 were critical to the Western Hills. During this period the rugged terrain was finally blanketed almost entirely with trees. Although the effort to reforest the Western Hills had continued since the early 1910s, with only brief pauses due to regime change, there was only three square miles (11900亩) of forest by
the start of the three-year plan, 1.08 square miles (4200亩) of which dated back to the republican period and the rest was planted from 1950 to 1954. This was only 9% of the 32.5 square miles (126298亩) of the Western Hills. But, by 1958, the reforested area had reached 16.37 square miles (63600亩), covering most places suitable for forestry.

Thereafter all the reforested sloping lands were administrated under a single name: the Western Hills Experiment Forest Plantation (西山试验林场). Following this first successful case of hillside reforestation under the new regime, the Beijing municipal government mobilized a larger number of people to plant trees on the other transition zones between the plain and its adjacent high mountains, establishing another thirty-four public forest plantations from the 1950s to 1970s. Reforestation in this manner continued into the 1990s. Apparently the success of the work on the Western Hills greatly inspired people of the time, making them believe that large-scale reforestation, especially that on hillsides, was a feasible undertaking. In the first few decades of the Communist experiments, the Western Hills was actually the starting point and testing ground for transforming the landscape of the new socialist capital.

The completion of the work on the Western Hills coincided with the first upsurge of a national reforestation movement in Communist China. In April 1958 the central government called on people to participate in a reforestation movement calculated to increase China’s average forest cover to at least twenty percent within ten years. This document claimed that to green all barren hills, roadsides, waterfronts, and vacant lands around houses was entirely possible and could be done quickly. Four months later Mao Zedong (毛泽东, 1893-1976), the leader of the Communist Party, went further to proclaim that reforestation should have scenic beauty as part of its goal so as to turn
both urban and rural areas into green and beautiful gardens like the Summer Palace (园林). He even proposed to allocate one third of national farmland for tree planting.\textsuperscript{387} This emphasis on the scenic quality of reforestation was unprecedented because prior to 1958, Mao had stressed only the utility of greenification.\textsuperscript{388} Beauty was now a higher goal than greenification: what made Mao and other party leaders suddenly so ambitious in 1958? Considering that the scenic forest on the Western Hills was fully created right before the emergence of that optimism, the success in Beijing should have played a key role in the new wave of the reforestation movement in China that followed and continued up till now, though there is no direct evidence to confirm this. In this sense, the Western Hills in 1958 was more like a start than a completion.

The national role of the Western Hills in 1958 was nothing new, as the site had been an active agent in the reforestation movement in China ever since the very beginning of the Republic of China. During the period of 1913 to 1958, various stakeholders, both Chinese and foreign, had used this rugged ground to experiment with modern ideas about the relationship among hillside land, vegetal cover, and human society. Tested and applied in the Western Hills, new approaches to hillside reforestation later became the guiding systems throughout the nation, particularly in North China. In this process, hillside reforestation served the reform efforts of modern men to manage different types of land resource in a more scientific and rational way, for the purposes of achieving environmental safety, economic prosperity, and scenic beauty. Therefore, the history of the reforestation of the Western Hills epitomized a critical aspect of the human-nature relationship in modern China.
Approaches to Hillside Reforestation

The desire for hillside reforestation was one thing, but its realization was another. We have seen why the successive authorities had been enthusiastic about the undertaking, but the challenges that they encountered and the strategies that they adopted in that process remain to be clarified. Why had the effort to reforest the Western Hills in the late 1950s achieved so much more than that of the previously four decades? What factors had influenced that progress? One factor was of course technical issues concerning tree planting on slopes, the key of which is how to plant the right tree in the right place at the right time. Equally as important was the factor of logistics. Large-scale hillside reforestation inevitably requires the mobilization of labor and capital, which were influenced by social and political conditions. The various efforts to reforest the Western Hills from 1913 to 1958 reveal how these issues intertwined.

To understand the pattern of reforesting the Western Hills under the Beiyang government (北洋政府, 1912-1928), one should first look at the work of the Ministry of Agriculture and Commerce. This work began with the establishment of a nursery under a foothill northeast of the main body of the Western Hills called the Dazhao Hill (大召山), which occupied 4.94 acres (30亩) of land that the ministry rented. The nursery staff lived in the adjacent Temple of the Remaining Light (遗光寺). The ministry cultivated Robinia pseudoacacia (English: black locusts; Chinese: 洋槐) in the nursery, the seeds of which were bought from Qingdao (then under the occupation of Germany) in 1914 and also from Germany in 1915. Tree seeds from Beijing’s environs and the Changbai Mountain (长白山) in Northeast China were also planted on an experimental basis.
Meanwhile, the local government staked out the forest plantation to cover the Blue Dragon Hill (青龙山), the Red Stone Hill (红石山), the Dazhao Hill, and the Elephant Trunk Gully (象鼻子沟). The ministry claimed that almost half a million trees had been transplanted from the nursery to the plantation in 1914, and 0.3 million more would be planted in 1915. In fact, tree planting at the Western Hills became a routine practice every spring.

The work of the Sino-French University offers a complementary source of information to address the question of precisely how and with what the slopes were planted. In their testing grounds at the Western Hills, the staff planted low growing trees such as false cypresses on the upper hill (560 meters above sea level) to enhance scenery and sunshade, trees like elms and pagoda trees on the lower hill (450 meters above sea level) for wood production, and fruit trees like peach and apricot on the hill foot (350 meters above sea level) where roses were also planted on the gentle slopes. Because the upper slopes lacked water and were exposed to wind and cold weather, nurseries were usually set up below the testing grounds to cultivate seedlings with irrigation, windshield, and warmth. In addition, native plants, on gentle slopes, were kept to feed bees in flowering seasons: these including elms on steep slopes and Toona sinensis (English: toona; Chinese: 香椿), Diospyros lotus (English: date-plum; Chinese: 君迁子), and Syzygium aromaticum (English: clove; Chinese: 丁香). Apparently a preliminary scientific understanding of hillsides had been under formation, and economic profit and scenic quality were also the criteria for selecting plant species.

Similar criteria were also manifested in the scheme made by the Summer Palace Administration Office (管理颐和园事务所) in 1935, which planned to green the
Summer Palace in two years and the Jade Fountain Hill in four years. Accordingly to this scheme, the main portions of the two hills were to be covered exclusively with Pinus massoniana (English: Masson’s pine; Chinese: 马尾松) and Larix principis-rupprechtii (English: Prince Rupprecht's Larch; Chinese: 落叶松) that featured drought tolerance, rapid growth rates, verdant foliage, and upright trunks. The two species were both physiologically suitable for the harsh conditions of hillsides and visually beautiful. In comparison, in the relatively fertile and wet areas down the hills and by the lakes, various fruit trees and shrubs were to be planted that would increase the administrative revenue by attracting visitors with their flowers and fruits. Along the trails and dykes would be some purely ornamental trees and shrubs to enhance the tourist experience (Figure 5.4). In essence, the scheme followed three principles: the selection of tree species based on the specific site conditions, the preference for tree species of direct economic value wherever possible, and the requirement of scenic quality for all. In this respect the scheme of 1935 was no different from that of the Sino-French University’s testing grounds.

From the perspective of preservation, this approach to reforestation is problematic. Although enhancing the attractiveness of the historic properties, it stressed scenic beauty rather than the previous vegetation conditions when the gardens were originally created in the Qing dynasty. To preserve the vegetal conditions of historic sites is difficult, if not impossible, because of the natural decay of plants and gardening maintenance, as D.F. Ruggles has pointed out. Nonetheless, in the case of the Summer Palace and the Jade Fountain Hill, it was the single-minded pursuit of scenic beauty that posed more threats to the authenticity of the site. It was not until the 1990s that the vegetation on the
Longevity Hill of the Summer Palace was replanted primarily with pine trees and cypress to restore it as it had been in the Qing dynasty.\textsuperscript{398}

The scheme of 1935 also provided a budget for the intended expenditures on seeds, seedlings, the nursery, labor, fertilizer, pesticides, tools, and well drilling (Figure

\textsuperscript{398} Han, Shao-jen, et al. 2019. \textit{Jade Fountain Hill}: a. Pinus massoniana; Larix principis-rupprechtii b. Cerasus ssp.; Albizia julibrissin; Prunus armeniaca; Syzygium aromaticum c. cherry; grape; strawberry d. Abies holophylla Maxim.; Abies sibirica Ledeb.; Pinus koraiensis Sieb. et Zucc.; Picea jezoen e. banana; apple; pear f. nursery


Figure 5.4 The 1935 planting design for the Summer Palace and the Jade Fountain Hill (by author, based on a municipal government document from the Beijing Municipal Archives: J021-001-01995)
5. 5). Among these expenses was the high cost of labor for hillside irrigation after planting. The trees had to be irrigated at least three times after they were transplanted to hillsides, and in areas of particularly poor soil, the soil even had to be replaced. To perform such work on hillsides was difficult, necessitating the temporary hiring of a large number of workers.\textsuperscript{399} This indicates that even the drought-tolerant pine trees could not survive hillside planting without human care. For this reason, the budget included an expenditure for the establishment of a nursery on a flatland of 6.6 acres (40\,\text{亩}) at the west foot of the Jade Fountain Hill, which was dedicated to the cultivation of pine tree seedlings. In this nursery some desirable types of pine tree unavailable in the market could be cultivated, and the seedlings could be transplanted to the adjacent hills during periods of favorable weather so as to avoid dessication in long-distance transport. In addition, it would be less costly to cultivate seedlings in that nursery than to buy them from elsewhere, as the value of the seedlings produced in the nursery after two years would be almost twice as much as the initial investment.\textsuperscript{400} Considering that the cost of seedlings bought from elsewhere already accounted for 42.9\% of the total budget, a self-managed nursery seemed financially optimal. However, this plan for the nursery remained suspended due to the lack of municipal funds to initiate it.\textsuperscript{401}
Figure 5.5 The budget for reforesting the Summer Palace and the Jade Fountain Hill according to the scheme of 1935 (by author)

The works of the Republican government, the Sino-French University, and the Summer Palace Administration Office together reveal some of the major challenges facing the participants of the reforestation of the Western Hills from 1912 to 1937. First, hillside reforestation demanded big investment of capital and labor due to land acquisition, plant purchase and cultivation, and worker employment. Second, seed science and industry in China were apparently nascent at the time, and the progress of reforestation was largely limited by seed collection and experimentation. Third, large-scale reforestation was labor-intensive and costly. In fact, the first forest law of China, enacted in 1914, allowed individuals or organizations to contract for public barren hillsides to plant trees without paying rent, exempting them from tax for five to thirty years. The government also gave honors to those who successfully cultivated 33-492 acres (200-3000 亩) of forest for more than five years and gave special grants to those whose trees were of relevance to international trade, ship making, and road
These policies revealed the public authorities’ lack of confidence to get the work done alone. Judging from the above challenges, the reforestation of the Western Hills was not an easy task, and it was thus understandable why each participant from 1912 to 1937 could only work on a limited portion of the Western Hills.

When the Japanese resumed the project of reforesting the Western Hills and other barren rugged terrains in North China, their work was hampered by the same challenges. The North China Reforestation Association plan of 1944 projected a period of thirty years to reforest the North China. Because the task was so difficult, the plan sought to mobilize local peasants by giving away free seeds and seedlings, arguing that peasants would be willing to participate once they had benefited from tree planting. To produce more seeds and seedlings, more nurseries had to be set up. For example, the association acquired 10.2 acres (62亩) of land down the west slopes of the Jade Fountain Hill to establish a nursery in 1944. By 1946 there were 34 seedbeds and 0.28 million seedlings in total. However, of the various types of land suitable for forestry, such as like farmland, waterfront, sand, and saline field, the association saw hillsides as the most difficult. It therefore argued that large-scale projects had to be postponed until small-scale experiments produced satisfactory results. Accordingly the experiments in both transplanting and direct seeding began at the Western Hills and other locations the same year. At the Jade Fountain Hill, the initial survival rate of hillside transplanting was pretty high, but before long most young trees died because the hillside soil retained little water and dried up after artificial irrigation stopped. Meanwhile, the progress on the main body of the Western Hills was also spatially limited: only an area of 0.3 square miles (1300亩) was planted with 0.2 million trees, although the total area staked out for
reforestation was 5.27 square miles (20483 亩). These experiments only lasted for about one year, because Japan surrendered in August 1945. Like their predecessors, the Japanese failed to extend the small-scale experiments to the entire terrain of the Western Hills, let alone the other hills and mountains in North China that they had intended to reforest in thirty years.

The first decade of the post-World War II period continued to witness fruitless effort. The first round began in early 1947 when the Central Forestry Laboratory made an ambitious scheme for reforesting the Jade Fountain Hill in two years and the main body of the Western Hills in ten years. This scheme divided the main body of the Western Hills into six working districts, which were further divided into ten sub-districts for the work of each year, one firewood area, and one area for planting walnut and fruit trees (Figure 5. 6). For implementation, the government would take care of the Jade Fountain Hill and a bit more than half of the main body of the Western Hills, while the rest was assigned to local private and public organizations like temples and schools. The government would also expand the former nursery from 15 acres (91 亩) to 128 acres (800 亩), providing seeds of appropriate tree species to private nurseries for free. The selection of such tree species took into consideration of physiological adaptability, ecological function, economic value, and scenic quality. According to this scheme, the government started the work on the first working district on 11 July 1947, which was staked out to forbid grazing and logging. By 1948 there had been three working stations set up along the northeast foot of the Western Hills. However, the work of the Central Forestry Laboratory was soon interrupted along with the retreat of the KMT government to Taiwan and the subsequent regime change. When the Communist Party
took over the region, the Western Hills only had about one square mile (4200亩) of land covered with 0.6 million trees.\textsuperscript{412}

Figure 5.6 The zoning map for reforesting the main body of the Western Hills according to the scheme of 1947 (by author, based on a municipal government document from the Beijing Municipal Archives, J001-002-00442)
The second round of fruitless effort to reforest the Western Hills lasted from 1950 to 1954. In this process, the restructured municipal government experimented with three ways to promote the undertaking: 1) the government hired workers to plant trees; 2) the government cooperated with local peasants by providing seedlings and technical instructions, and the latter shared out a year-end bonus through their labor; and 3) the government organized local residents to do volunteer labor. But none of these worked out. A foremost obstacle was the lack of mature techniques. Direct seeding on hillsides, the quickest and most efficient method, had not yet been successful, and the timing of transplanting seedlings to slopes remained difficult to grasp. Worse still, the new government officials were unfamiliar with the physical and social conditions of the Western Hills and consequently failed to make good decisions according to comprehensive plans. In addition, local residents had little motivation to participate in the reforestation. Many rural villagers believed that the reforested Western Hills was to be sealed as a state-owned scenic area in the future, and that they would be prohibited from cutting woods, grazing animals, and cultivating crops there. In addition to the problems of timing and labor, the process of transplanting had always been hampered by the haphazard operation of nurseries, and many young trees on hillsides died of frost in the subsequent winter season due to the lack of human care. Therefore, the work from 1950 to 1954 had been spatially confined to only a few areas, including the Elephant Trunk Gully, the Cherry Gully (樱桃沟), and the Eight Great Sites. It added only about 1.98 square miles (7700亩) of trees to the Western Hills, 1.13 square miles (4400亩) of which was planted by the government and the rest by local residents.
Although the two campaigns to reforest the Western Hills in 1946-1954 accomplished little, they provided important lessons by trial and error. First, direct seeding did not work on hillsides because seeds easily died from spring and fall drought, summer runoff, and winter frigidity. Instead the best method was to transplant seedlings to terraces cut into the slopes where water was better retained, and this had to be done after the first rain of summer season and before the mid-summer heat. As for tree species, Pinus tabuliformis (English: Chinese red pine; Chinese: 油松) and Platycladus orientalis (English oriental arborvitae; Chinese: 侧柏) were the two most suitable for the hillsides.\textsuperscript{416} Second, it was not feasible to reply upon local residents, especially rural populations, to do large-scale reforestation because of the ambiguous land ownership. When the municipal authorities turned to the army for help in 1954, the soldiers proved to be much more efficient and well organized.\textsuperscript{417} This convinced officials that the cooperation between the government and the army would be the most reliable way to reforest the Western Hills.\textsuperscript{418} Lastly, large-scale reforestation could not be achieved without systematic planning. Relevant resources and capital had to be recruited according to the exact requirements of each site and coordinated throughout every phase from seedling to post-planting maintenance.

The final completion of the reforestation of the Western Hills from 1955 to 1958 apparently benefited from the above lessons. The Municipal Forestry Survey Team (北京市林业勘测队) began with a comprehensive survey of the whole rugged terrain in early 1955, which revealed that most parts of the Western Hills were not plant-friendly because of their extremely poor soil conditions. Such conditions were first derived from the parent materials of the hills, of which 15% was dolerite and shale featuring relatively high clay
and mineral content as well as adequate soil moisture, while the rest was mostly made of sandstone that decomposed slowly and retained little water. This composition of bedrock meant that it was difficult for the Western Hills to form fine-textured soils in a short time. Worse still, long-time intensive agricultural development had further desertified the hillsides. In 1954 the Western Hills had 48,596 people, 80% of whom made a living by planting crops and fruit trees, feeding livestock, chopping trees for firewood, and cutting grasses to weave daily utensils. These created economic pressures that led to a landscape that was 44% barren and treeless used for free-range grazing in the Western Hills, 23% used for crop and fruit tree planting, and only 9% covered with trees. The trees only survived within a few temples, palace gardens, and plantations (Figure 5.7). These agricultural activities harmed the fertility of the land by greatly accelerating the soil erosion process and hampering the formation of new soils. The total rate of surface runoff was as high as 60%, and a hillside land usually was no longer arable after three years of farming due to the depletion of its surface soil (normally 10cm thick). Landslides were particularly frequent in steep gullies where farming and goat grazing were performed. In fact, the Western Hills had almost completely lost its old soils and the new soils had not yet been well developed and remained very stony. Therefore, in order to facilitate soil formation, the Municipal Forestry Survey Team proposed to close off the whole rugged terrain to crop planting, free-range grazing, and grass cutting before and after reforestation. The existing crops had to be concerted to fruit trees, and the livestock confined within specific farms.419
Figure 5.7 The conditions of the Western Hills in 1954, before the start of the last project. By author, based on Xi Shan zaolin 西山造林所, *Beijing xiao Xi Shan zaolin jishu jingyan chubu zongjie* 北京小西山造林技术经验初步总结 (1959).

Based on its new land use regulation, the Municipal Forestry Survey Team went on to provide a list of tree species for reforesting the targeted ground (Table 5.2). The species were chosen first for their adaptability to hillside conditions. Most were tolerant of dry and poor soil, and a few could even survive in extreme conditions of wind, smoke, and soils that were saline, calcareous, or alkaline. Moreover, some species did not just
passively adapt themselves to the site but also served as the agents for soil improvement. For example, the fallen leaves of Robinia pseudoacacia and the root of Amorpha fruticosa were capable of increasing nitrogen in soils, and the fallen leaves of Cotinus coggygria could form thick ground cover to hold sands in place. In this way the team hoped to make the rocky and barren soils of the Western Hills more plant-friendly in the long run. Also included were some tree species of aesthetic beauty: Cotinus coggygria and Acer truncatum whose leaves would turn bright red in autumn and thus greatly enrich the scenic quality of the forest landscape. Therefore, taking into consideration of plant adaptability, soil improvement, and visual beauty, the Municipal Forestry Survey Team expected the selected tree species to survive well on the slopes of the Western Hills in a multi-functional way.

With respect to how the trees should be planted, the scheme of 1955 offered two general guidelines. On the one hand, each tree species was to be planted at its specific locations where soil conditions were most suitable. Four types of soil were identified across the site in terms of mineral composition, and each of them was further divided into a dry sub-type and a wet sub-type. This typology would guide the whole process of transplanting. On the other hand, a mixture of conifer trees, broad-leafed trees, and shrubs would provide scenic enhancement. Vertically, the effect of heterogeneity would depend upon the mixture of trees and shrubs to form multiple vegetation layers, and the trees were supposed to account for 76.77% of the total number of plants. This mixture was particularly important for the early stages of the new forest before crown closure. Horizontally, each tree species was to be planted as a patch, and the ratio of total conifer trees to broad-leafed trees was supposed to be approximately 4:6. After these trees grew
up, the colors and forms of various patches would contrast with each other for picturesque effect. In particular, the size of a single-species patch near places like historical monuments and sanatoria would be smaller (1-10 hectares) than that of others elsewhere (10-30 hectares) (Figure 5.8). Through these approaches, greening and beautifying were to be integrated into a single course of action.

Table 5.2 List of major tree species for reforesting the Western Hills according to the scheme of 1955

<table>
<thead>
<tr>
<th>NAME</th>
<th>FEATURE</th>
<th>NUMBER</th>
<th>AREA PERCENT (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platycladus orientalis</td>
<td>Sun-loving; deep root; fast growing; tolerance of dry and poor soil as well as wind</td>
<td>5340069</td>
<td>26.12</td>
</tr>
<tr>
<td>Pinus tabuliformis</td>
<td>Sun-loving; deep root; fast growing; tolerance of dry and poor soil</td>
<td>2452983</td>
<td>12.68</td>
</tr>
<tr>
<td>Robinia pseudoacacia</td>
<td>Sun-loving; shallow but extensive root; fast growing; tolerance of dry and poor soil; fallen leaves containing nitrogen</td>
<td>3452482</td>
<td>25.20</td>
</tr>
<tr>
<td>Cotinus coggygria</td>
<td>Sun-loving; tolerance of salinity; foliage turning to red in fall; fallen leaves forming thick ground cover to hold sands</td>
<td>1200520</td>
<td>5.04</td>
</tr>
<tr>
<td>Ailanthus altissima</td>
<td>Sun-loving; deep root; fast growing; tolerance of drought, smoke, and salinity</td>
<td>1191513</td>
<td>6.25</td>
</tr>
<tr>
<td>Fraxinus chinensis</td>
<td>Tolerance of calcareous soil; intolerance of dry and poor soil</td>
<td>1027638</td>
<td>5.38</td>
</tr>
<tr>
<td>Walnut tree</td>
<td>Crown closure; deep root; intolerance of poor and dry soil; timber and fruit value</td>
<td>893391</td>
<td>6.94</td>
</tr>
<tr>
<td>Pyrus betulifolia</td>
<td>Without explanation</td>
<td>623442</td>
<td>3.34</td>
</tr>
<tr>
<td>Acer truncatum</td>
<td>Tolerance of shade, wind, and poor soil; fast growing; foliage turning to red in fall</td>
<td>533440</td>
<td>5.59</td>
</tr>
<tr>
<td>Populus</td>
<td>Sun-loving; fast growing; tolerance of dry and alkaline soil</td>
<td>54572</td>
<td>0.18</td>
</tr>
<tr>
<td>Amorpha fruticosa</td>
<td>Tolerance of dry and alkaline soil; strong root capable of trapping nitrogen; intolerance of cold</td>
<td>5530286</td>
<td>33.03</td>
</tr>
<tr>
<td>Hippophae rhamnoides</td>
<td>Anti-erosion; tolerance of drought, cold, and alkalinity</td>
<td>1212153</td>
<td>4.24</td>
</tr>
</tbody>
</table>
Figure 5.8 The horizontal mixture of plant cover at the Western Hills upon the completion of its reforestation By author, based on Xi Shan zaolin suo 西山造林所, *Beijing xiao Xi Shan zaolin jishu jingyan chubu zongjie*.

The scheme offered four technical steps for the construction. The first step was to divide the Western Hills into four working districts according to the topography, which were then assigned to 46 construction teams consisting of 395 smaller units. The dividing lines (5 meters wide) among these units also served to prevent fire, and other fire
protection buffer zones were set up along the ridges perpendicular to prevailing wind direction (10-15 meters wide) and within large stretches of conifer woods (30-50 meters wide). Fourteen overlook kiosks were to be put up on the upper slopes to further facilitate monitoring and patrolling.\textsuperscript{422} The second step was the creation of level terraces on slopes the year before the reforestation (between the end of rain season and soil freezing) for the purpose of slowing the flow of water so as to prevent erosion and retain rainfall. A terrace’s level planting bed usually measured 3m (D) $\times$ 40cm (W) $\times$ 30cm (H) in size, being at intervals of 1.2m vertically and 1m horizontally. The third step was to transplant seedlings from nurseries to the slopes during Beijing’s rainy season when the soil moisture of the Western Hills was at its peak. Conifer seedlings (2.5 years old) were to be transplanted after the first rain of summer and until the start of fall, and bread-leafed seedlings would be planted in the following months up till soil freezing. Direct seeding was subordinate and only employed for a few tree species like Quercus cocciferoides (Chinese: 橡栎) and Prunus armeniaca (English: plum; Chinese: 山杏) also in rain season. The last step was the maintenance of the seedlings that had been planted on hillsides. Reduce evaporation and weed competition, the top 10 centimeters of soils would be tilled and weeded should be removed continuously through the first three years after the reforestation. Meanwhile, constant pruning and pest control had to be performed to ensure the health of young plants. The costs of Step 1 through Step 3 accounted for 61% of the total budget, while the other expenditures included the survey, the administration, the infrastructure and facility, and the propaganda and encouragement (Figure 5. 9).\textsuperscript{423}
Figure 5.9 The budget for reforesting the Western Hills according to the scheme of 1955. Data source: Beijing shi linye kance dui, “Xi Shan zaolín lvhuà zaolín diàochá sheji shuoming shu.”

All the technical guidelines and steps mentioned in the scheme by the Municipal Forestry Survey Team were taught to the workers who implemented the actual work on the Western Hills. The major source of labor came from the army troops stationed in Beijing. Nearly 280,000 soldiers carried out the actual work of reforestation in 1955-1958, comprising slightly more than half the work force and finishing 76% of the total construction. When the troops withdrew, temporary workers and volunteers were summoned in their place.424 Besides the occasional crisis of labor shortage, the process of implementation also encountered a number of problems that had been ignored or unexpected in the original scheme. For example, when the nurseries were greatly expanded, many newly acquired lands were actually not plant-friendly and thus resulted in seedlings and seeds of low quality. Also problematic was the fact that the scheme did not include detailed construction drawings for each working unit. As a result, the workers
lacked information about the correct mixture of different plants and how many trees
should transplanted for a specific slope. Despite these setbacks, the authorities declared in
1958 that most parts of the Western Hills that were suitable for forestry had been
reforested.425 The total area of the forest in 1958 reached to about 16 square miles
(63,652亩).426

Thereafter, the maintenance of the young forest became the top priority, including
soil loosening, weed removal, pest control, and pruning. This new work was first
assigned to twenty-six central government departments, military troops, and universities,
people from which worked on the hillsides without pay during the years from 1959 to
1966. After the establishment of the Western Hills Forest Plantation Administration in
1962, the municipal officials and factory workers took over and continued the work until
1966. They also built a pump station at the Weijia Village (魏家村) to increase water
supply on the upper hillsides. During the Cultural Revolution, the jurisdiction over the
plantation was divided and transferred to three district governments, and the number of
staff reduced from 600 to 100. With the focus of work turning to food production, more
slopes were developed for planting crop and oil trees. As of 1982 the Western Hills had a
forest of about 15 sq. miles (58800亩), which covered 62.7% of the terrain.427

The work from 1955 to 1982 marked the end of a campaign against the challenges
in the reforestation of the Western Hills that dated back to 1913. The ineffectiveness of
various former projects had been largely due to the backwardness of plant science,
unfamiliarity with the physical and climatic conditions of the hillsides, or inappropriate
timing and methods of planting. But at the same time the challenges were also socio-
economic because labor and capital had to be mobilized and organized to perform the
large-scale reforestation on the slopes. The frequent regime changes and military conflicts in the republican years made it difficult, if not impossible, to garner the necessary resources for the undertaking. In contrast, the work of 1955 to 1958 was informed by more technical knowledge and experience, and more importantly Beijing was under the reign of the strongest government ever since the collapse of the Qing dynasty. It was under these favorable conditions that the effective strategies for reforesting the Western Hills could be possibly designed and put into action.

**The Forest Park and Its Predicaments**

On 14 November 1992, the Western Hills Forest Plantation as a whole was designated by the State Forestry Administration (国家林业部) as a National Forest Park (国家级森林公园). This change was part of a national phenomenon that emerged in the early 1980s and continues up till now, in which many state-owned reforested sites have been developed for tourism. Thus far, two parts of the Western Hills Forest Plantation have been open to the public, including the Baiwangshan (百望山; open since 1992) area and the Changhua area (昌华景区; open since 2011) lying between the former Imperial Hunting Ground and the Eight Great Sites. The two are the closest to the region’s most popular tourist spots, such as the Summer Palace, as well as to downtown Beijing. Such locational choices seem to echo the vision of the 1950s about the recreational potential of the reforested Western Hills. But how exactly has a former forest plantation been turned into a contemporary forest park? The transformation was about more than trees: it involved human stakeholders.
The tourist development in the Western Hills Forest Plantation started from the Baiwangshan (百望山) area. Relying upon a financial grant from the municipal government, the plantation staffs began to add new elements into the hillside woods, such as scenic trees with red leaves in fall, stone steles, and overlooks on hillsides and hilltops (Figure 5. 10).429

Figure 5. 10 The plan of the Baiwangshan area in June 2013 (by author, based on the guide map acquired at the visitor center of the park in June 2013)
Among these additions, the Green Culture Slab Forest (绿化文化碑林) is the most unique. It dates back to 1991 when the municipal government formed a special committee to collect the inscriptions, handwritings, and calligraphies of celebrities from all walks of life concerning forestry. The stonemasons then carved these texts onto the stone slabs that were later installed into walls, covered corridors, and pavilions throughout the Baiwangshan area. The center of this slab forest is a pavilion inside the east entrance, under which stands the slab with Chairman Mao’s slogans—“Greening the Motherland (绿化祖国)” on the front and “Turning the Land into Gardens (实行大地园林化)” on the back (Figure 5. 11). Treating the landscape of the Western Hills Forest Plantation as a medium, the early tourist developers apparently intended to provide a narrative of the history of the reforestation movement in China. The stone slabs serve to remind visitors of the historical association of the verdant woods they see today.

Figure 5. 11 The pavilion in the Baiwangshan area that shelters the stone slab with Chairman Mao’s texts (by author, 2013/6/3)
This purely state-driven pattern that stressed the educational function of forest changed when the plantation administration signed a 70-year agreement with the Beijing Branch of the China International Industry and Commerce Co. Ltd. (CIIIC-BJ) in 1999, establishing a limited liability company for developing the Western Hills National Forest Park into a popular tourist destination. The plantation administration held a 30% stake in the company by transferring the right to use that state-owned forest (23 sq. miles) and infrastructures as well as achieving the legal approval, while CIIC-BJ held the remaining stake by investing the capital and undertaking the construction. The administration was to continue the forest maintenance, for which CIIC-BJ had to pay 2.6 million Chinese Yuan every year until the annual profit of the company was enough to compensate for the cost. The Forest Park Company was officially established in March 2000 with a business scope covering the investment and management of forest tourist projects, the sale of arts, crafts, stationery, sports, and daily products, and the sale of tree seedlings. Since then, the focus of the tourist development of the plantation turned from the Baiwagnshan area to the Changhua (昌华) area.

The motives behind this partnership were obvious. Realizing the potential of the Western Hills forest for attracting visitors, the investment in tourist development was clearly profitable. The plantation administration, as a state-run enterprise in charge of the forest, lacked start-up capital and needed outside resources to initiate the development as soon as possible. Although by cost sharing, the administration could not enjoy all the possible future profits, it could immediately receive a stable annual subsidy at no extra cost and even share more money based on its 30% stake once the company became profitable. It was CIIC-BJ that had to assume the technical challenges and financial risks
of turning that forest into a new tourist attraction in exchange for its 70% stake in the profits. The agreement reflected an optimistic vision about the commercial future of the reforested hillsides.

This optimism was soon proved wrong. The Forest Park Company was stymied in its progress in the years that followed due to oppositions from two higher departmental authorities. The overall plan made by the Beijing Institute of City Planning (BICP; 北京市城市规划设计研究院) was vetoed by the Beijing Municipal Commission of Urban Planning (BMCUP; 北京市规划委员会) in June 2001 on the grounds that there were too many government and military units within the planned area, and that the size of the park had better be reduced and its boundary adjusted. Worse still, the company also failed to achieve the approval from the State Forestry Administration, which pointed out in 2002 that uncontrolled tourist development like the construction of transportation infrastructure and service facility could actually destroy the ecological environment. It was also critical of the fact that some plantation officers transferred the rights of state-owned forests to private developers at very low prices, thus causing the loss of state assets. For these reasons, Beijing was required to first submit an overall plan for all its forest parks before giving approval to that of an individual forest park. Because no one knew when that overall plan might be produced, the original schedule of the Forest Park Company was suspended indefinitely.433

This suspension broke up the partnership. The Western Hills Forest Plantation Administration proposed to terminate the agreement in December 2001 because the problem of the approval meant that a continuous cooperation would incur losses on both sides. When CIIC-BJ did not respond, the administration went further to ask for
dissolution of the company a year later. The two parties eventually went to court against each other. The lawsuit went up and down the appeals ladder repeatedly until the No.1 Beijing Municipal Intermediate People’s Court approved the dissolution of the partnership.434

Although they won the lawsuit, the plantation staffs were frustrated about the slow progress in forest tourism at the Western Hills. Still waiting for the overall plan for all forest parks of Beijing in 2010, many complained about the main constraints on development at the time. With the individual plan for the Western Hills National Forest Park in suspension, the staff could not initiate large-scale and high-quality construction of necessary infrastructures and faculties to cater to the needs of tourists and visitors, and in any case, they still lacked start-up capital for the construction. The boundary disputes of the park with the adjacent government and military units also hampered the making and implantation of the plan. Finally, although most of the staff had studied forestry but not tourism, design, and marketing, they could still see that in comparison to other tourist spots, the park had no uniquely attractive scenery, activities, or events.435

Nonetheless, the plantation staff was eager to take advantage of the forest resources at the Western Hills. BICP submitted a revised plan in 2006 for the Western Hills National Forest Park, which appeared to be a great compromise in comparison to the original vision of 1999. The planned area of the park was reduced from 23 sq. miles (5949 hectares) to 10 sq. miles (2686 hectares), not including many areas adjacent to the government and military units as well as some semi-rural settlements. This area was further divided into three types of zones: a) the key ecological protection zone that was not open to tourists; b) the ordinary ecological protection zone that could have only tiny
amounts of sightseeing roads and facilities, and c) the forest tourist zone in which intensive human activity and construction were allowed as long as they did not threaten the forest. As a result, besides the area of Baiwangshan under development since the early 1990s, only the hillsides lying from the Temple of the Reclining Buddha to the Eight Great Sites were to be opened up for massive new development (Figure 5.12).436

Figure 5.12 The reduced size of the Western Hills National Forest Park according to the scheme of 2006 (by author, based on the copy in Capital Library of China, M31/121)
Apparently the reduction in size and restriction on development intensity were a direct response to the concerns of BMCUP and the State Forestry Administration. This great compromise revealed the strong intention of the stakeholders to get started with the tourist development even if the latter was to be so limited spatially and strategically. Limited development began in the Changhua area in 2008, although it was unclear how the plantation administration managed to obtain the support from the high authorities when the overall plan was not yet approved. This area became the second part of the Western Hills Forest Plantation to welcome visitors on 24 September 2011. Viewed from above, its tourist faculties and infrastructures are concentrated mostly near the east main entrance where there is a parking lot, teahouse, and hotel (Figure 5.13).

Inside the entrance is an artificial water system, bound on the south by five small gardens, each of which features an ornamental plant species ranging from Paeonia suffruticosa and Magnolia denudata, through Lagerstroemia indica and Cerasus humilis, to Prunus mume. On the slopes beyond the above spots are mainly the woods, much of which is actually inaccessible. Only one paved trail and several stairway trails pass through this portion, being dotted with an overlook, a pavilion, and three W.C.s dot along the way. Judging from the scope and intensity of land use, the development of the Changhua area is basically in accordance with BICP’s revised plan of 2006. The design strategy for the main entrance area is clearly different from that of the rest. The latter is primarily about the identification of the best spots for “borrowed views.” For example, the main overlook is situated on the highest peak to take visual advantage of the nearby hills and the vast plain landscape lying at the east foot of the Western Hills (Figure 5.14). The pavilion on a foothill below shares this view.
Figure 5.13 The plan of the Changhua area in 2012 (by author, based on the guide map acquired at the visitor center of the park in June 2013)
In contrast, from the main entrance area the views are directed more toward new scenes created within the boundary of the park. The centerpiece is a 25-meter high artificial waterfall that faces the main entrance and covers an area of about 3200 sq. meters. The designers exploit the existing slope to install a cascading structure by placing between the top of the waterfall and a pond at bottom a large number of rocks over which the water flows vigorously (Figure 5. 15). The pond is also the end point of a winding stream from the upper slopes. A terrace plaza, wooden drawbridge, trails, and several extensive lawns dotted with ornamental plants border these water bodies. General speaking, apart from its topography, the Changhua area looks like many other urban parks of Beijing in terms of style and elements.
The tourist development in the Baiwangshan and Chuanghua areas reveals four fundamental predicaments of the Western Hills National Forest Park since the early 1990s. First, to designate an area as a public park is to make it open access, but the reforested hillsides of the Western Hills were previously off-limits to ordinary wanderers. The stakeholders living within or adjacent to this forest had probably grown to the activities of forestry, but many were unfamiliar with mass tourism. The former forest plantation’s transformation into a park had an impact on them. Second, the right of forest use remains sensitive at the Western Hills because both the woods and the lands below are state-owned. The public authorities hesitate to give the private sector full power to commercialize the state assets, although they themselves would wish to do the same if money were available. Third, although the reforestation of the Western Hills before the
1980s had long been expected to facilitate beautification and recreation, its primary objective was environmental safety and improvement. There was apparently no consensus yet about the appropriate intensity of tourist development on the reforested hillsides, and thus the worry over the potential of such development for ecological damage largely led to the suspension of the approval. Lastly, a forest park made up of only hillsides and man-made woods is not sufficient to attract tourism, and attempts have to be made to increase the interest for visitors. The stone slabs of the Baiwangshan area reflect the site’s association with forestry, whereas the water scene of the Changhua area derives from the traditional Chinese garden design. It is apparent that no consensus exists on this issue of “theming” the park. In sum, these four predicaments together have greatly handicapped the previous forest tourism at the Western Hills. How they will be solved determines the future of the forest park.

Summary

We have seen how the barren slopes of the Western Hills in the beginning of the twentieth century was first planted with vegetation and then partly transformed into the pleasure grounds. The key mechanism of this process lies in the changing relationship among three concerns over hillside: to maintain healthy watersheds by stemming soil erosion and reducing flood hazards; to cultivate local timber and wood products industry; and to provide recreational development for people. During the period from the 1910s to the 1980s, environmental safety, economic production, and mass recreation converged as the justifications for forestry as the best pattern of land use for mountainous areas, and the central and municipal governments reserved vast acreages of sloping lands in the public domain. With the new type of government expansion, new reforestation
techniques and land use policies were experimented and implemented in the Beijing Western Hills, and the previous agricultural and exploitative activities of the local peasants were either forbidden or regulated. This top-down land use reform is the product of a progressive era in which the ideas of rational land use with respect to deforested mountainous areas gained momentum and were eventually consolidated at the government level.

The transition of the Western Hills has been related to the processes elsewhere in China. As the first rugged terrain subject to be reforested under the Beijing government, the Western Hills was the starting point for similar environmental management movements across the country. Under the Japanese occupation, it was a major testing ground for reforesting the barren hillsides of North China. In the late 1940s, the Central Forestry Laboratory intended to green the site within ten years so as to inspire similar projects nationwide. In the third half of the twentieth century, the work on the Western Hills was the cornerstone of the Communist Party’s plan to “Green the Motherland.” Therefore, the local history of the Western Hills is actually part of a broader social formation, epitomizing the modern transformations of many other mountainous areas all over China.

However, after a new national forest was created in the Western Hills, the three concerns have tended to split due to the rise of tourist development since the 1990s. The new forests on the Western Hills had been designed for scenic beauty to facilitate sightseeing, but tourists demand yet more attractions, service facilities, and accessibility. These developments offer opportunity for local peasants, some of whom earn more money by opening their orchards for fruit picking. However, the ecological function of
the forest is very likely to be disrupted if inappropriate construction and activity occur.
The contradiction between conservation and recreational development, together with the
problems concerning boundary, right to use, and design style, makes the creation of the
Western Hills National Forest Park problematic. Despite the impediments, the surge of
interest in recreational uses of forest reveals the burgeoning economic association of the
Western Hills with recreation. The upper Western Hills is one of many other National
Forest Parks that were also previously forest plantations, and its recent recreational
development tells much about the changing priorities of government and society and
reveals opportunities for good landscape design practice.

However, the case of the Beijing Western Hills also has implications beyond
China. Its transformation from a rural and denuded landscape to a national forest and
forest park is part of a larger movement aiming at managing deforested mountainous
areas around the world, especially in the Western countries. The history of the
Appalachian Mountains during the New Deal is particularly comparable in this respect.
Like the Beijing Western Hills around 1912, Appalachia was also severely denuded in the
1920s due to the haphazard timber industry serving the eastern population centers as well
as mining and ranching since 1880.439 It was not until the 1930s that the federal and state
governments cooperated to preserve remaining virgin forests, reforest barren hillsides,
and build transportation infrastructures in the Appalachian region, particularly with the
assistance of the Civilian Conservation Corps (1933-1942). The goal was to reverse soil
erosion, prevent flooding, create jobs, and make mountain scenery more accessible to the
increasingly mobile urban residents of America. Following these labor-intensive works
were the creation of a series of national parks and forest, such as the Green Mountain National Forest and the Green Mountain Parkway reforestation.

Although deriving from a different social context, the Appalachian region shares many similarities with the Beijing Western Hills with respect to the way its vegetal cover was regenerated and used. What the man-made forest of the Beijing Western Hills tells is actually a common story all over world, or at least in modernizing countries, about the rise of a scientific land use in mountainous areas where agriculture and exploitation gave way to conservation and recreation. This story also shows a process of government expansion that brought a new type of public governments into the realm of unprecedented influence.

Notes

354 Beijing ligong daxue xiaoshi congshu zhongfa daxue shiliao bianxie zu 北京理工大学史从书中法大学史料编写组, *Zhongfa daxue shiliao xubian* [The historical materials of the Sino-French University (a sequel)] (Beijing: Beijing Institute of Technology Press, 1997), 146. The 1st Testing Ground (1920-), including several tracts of land scattered on the plain east of the main body of the hills, had a total area of 121.4 acres (737亩). It focused on medicinal plants for serving the sanatorium at the Temple of the Azure Clouds. The 2nd Testing Ground (1923-) was near the Hot Spring and covered an area of 56 acres (340亩). It included a nursery of 4.9 acres (30亩) that cultivated fruit and timber trees. In fact, The staffs of this ground had transplanted their pine and cypress seedlings onto the barren slopes of the Dragon Appearing Hill (显龙山) every spring since 1923. Considering that at the north foot of this hill was the Hot Spring Sanatorium affiliated with the university, the aim of such effort might be largely to beautify its surroundings. The 3rd Testing
Ground (1924-) situated on the Golden Hill (金山) northwest of the Western Hills, covering an area of about 164.7 acres (1000亩).

355 Ibid., 150-153.
361 See Zhongguo sheke yuan jindai shi suo 中国社科院近代史所, Sun Zhongshan quanji 孙中山全集 [The complete works of Sun Yet-sen], Volume 1 (Beijing: Zhong Hua Book Company, 1981), 1-2, 10. The letters to two leading officials of the Qing government, Zheng Hongzao (郑藻如, 1824-1894) and Li Hongzhang (李鸿章, 1823-1901) are included.
362 Ibid., Volume 9, 407-408. Based on Sun's several speeches in Guangzhou of 1923, this text offered an account of his three principles (三民主义): nationalism, democracy, and livelihood.
363 Sun Yat-sen, The International Development of China (Shanghai: Commercial Press, 1920), iii-iv. The text was originally written in English and later translated into Chinese with the title 建国方略.
364 Ibid., 5-10, 67, 106.
365 Ibid., 139.
366 Chen Zhi 陈植, Zaolin yuanyi 造林原义 [The theory of afforestation] (Shanghai: Commercial Press, 1933), 4-8. The author apparently borrowed the concepts from the German scholars, such as Max Endres, Handbuch der Forstpolitik mit besonderer Berücksichtigung der Gesetzgebung und Statistik (Berlin: Julius Springer, 1905): 68. [I can't understand the translation – maybe just omit it.]
368 Ibid.
369 Chen, Zhongguo senlin shiliao, 136-139
370 Ibid., 140.
concerning the Beijing Western Hills Experiment Forest Plantation], eds. Gan Jing and Zhou Rongwu (Beijing: China Environmental Science Press, 2010), 5-23. This document was first published in March 1956.

382 Ibid.

383 Beijing Xi Shan shiyian linchang, Beijing shi xiao Xi Shan linye jianshe shi, 20. The total area of the Western Hills mentioned here does not include the Wolf Hill (狼山), the Golden Peak Hill (金顶山), and a few special areas.

384 Ibid., 8.


388 Ibid., 7-50. Mao noticed the causal relationship between hillside deforestation and river flooding as early as the 1930s, and he was involved in the initiation of the reforestation movement within the territory of the Chinese Soviet Republic. After the founding of the People’s Republic of China, he resumed promoting the undertaking actively since 1955 by speaking at conferences, writing and editing publications, and issuing and revising government documents.

389 Chen, Zhongguo senlin shiliao, 139-140.

390 See Lin Chuanjia 林传甲, Da zhonghua jingzhao dili zhi 大中华京兆地理志 [The geographical chronicles of Beijing], Vol. 14, Ch. 79 (Beiping: Martial Library 武学书馆, 1919), 157.


392 Chen, Zhongguo senlin shiliao, 77-79. The tree species from the environs of Beijing included Pinus koraiensis (English: Korean pine; Chinese: 果松), Chamaecyparis (English: false cypress; Chinese: 扁柏), Styphnolobium japonicum (English: pagoda tree; Chinese: 国槐), and Castanea Mill. (English: chestnut; Chinese:
Those from Northeast China included maple trees, elm, pine trees, and cypresses.

Beijing Xi Shan shiyan linchang, *Beijing shi xiao Xi Shan linye jianshe shi*, 6-7. The initial confines of the forest plantation was unknown because a political incident in 1916 (张勋复辟) destroyed the relevant documents then kept at the Temple of Heaven. The information I rely on was based on the area that the Wanping County (宛平县) staked out again in 1923.


Beijing ligong daxue xiaoshi congshu zhongfa daxue shiliao bianxie zu, *Zhongfa daxue shiliao xubian*, 150-153. The university had three testing grounds in the vicinity of the Western Hills: one below the Temple of the Azure Clouds, one on the Dragon Appearing Hill (显龙山), and one on the Golden Hill (金山). The detailed information mentioned here was for that on the Golden Hill. Although there is a lack of direct evidence, these methods should have circulated within the circle of the Sino-French University or even beyond; thus quite possibly they had also been adopted in the work on the Dragon Appearing Hill and others.


Ibid.


Zhang, *Jingming Yuan shuwang*, 147.

J025-001-00114.

J021-001-01835.

J001-002-00442.
The fact that the Summer Palace was not included might indicate that its reforestation had already been done after the scheme of 1935.

J001-002-00442. The tree species for the Jade Fountain Hill included: Pinus tabuliformis (油松), Pinus bungeana Zucc. (白皮松), Platycladus orientalis (侧柏), Robinia pseudoacacia (洋槐), Quercus (栎), Toona sinensis (香椿), Populus davidiana (山杨), and (黄连木). The tree species for the main body of the Western Hills included: Pinus tabuliformis (油松), Pinus bungeana Zucc. (白皮松), Platycladus orientalis (侧柏), (白榆), Robinia pseudoacacia (洋槐), Quercus (栎), Toona sinensis (香椿), Ailanthus altissima (臭椿), and Populus davidiana (山杨).

Zhongguo linye kexue yuanshi 1958-2008, 5-6, 9. The 1st Western Hills Working District was at Dongsimu (董四墓) and at Beixin Cun (北辛村), and the 2nd Western Hills Working District was at Zhenghuang Qi (正黄旗). The rest include the working district at Huang Cun (黄村) and working stations at Tiejiang Ying (铁匠营) of Beijing, Beidaihe (北戴河), and Shijiazhuang (石家庄).

For the exact area of forest, see Beijing Municipal Forestry Survey Team, “Xi Shan Zaolin Lvhua Zaolin Diaocha Sheji Shuoming Shu.” For the number of trees, see Fang Lifei ed., “Ershi shiji Wushili Niandai Beijing Lvhua Zaolin Shiliao (Shang),” 157.

Beijing Xi Shan shiyian linchang, Beijing shi xiao Xi Shan linye jianshe shi, 14-16. The second method was to use the 400-mu land in the Lushi Shan (卢师山) confiscated from landlords, and the labor force came from local residents in Mentou Cun (门头村) and Badachu (八大处). For ownerless lands, local farmers could get thirty percent of profits; and for state-owned lands, local farmers could get twenty percent.

Beijing shi linye kance dui, “Xi Shan zaolin lvhua zaolin diaocha sheji shuoming shu.”


Fang, “Ershi shiji wushi niandai Beijing lvhua zaolin shiliao (shang).”

Beijing shi linye kance dui, “Xi Shan zaolin lvhua zaolin diaocha sheji shuoming shu.”

Ibid.

Ibid.

Ibid. The locations of the kiosks included: Mawu Zhai (马武寨), Sanzhu Xiang (三炷香), Hou’er Ding (猴儿顶), Kaokao Yu (栲栳峪), Woniu Tai (卧牛台), Xiaobai ta (小
423 Ibid.
424 Beijing Xi Shan shiyian linchang, Beijing shi xiao Xi Shan linye jianshe shi, 20-22.
426 Beijing Xi Shan shiyian linchang, Beijing shi xiao Xi Shan linye jianshe shi, 40.
427 Ibid., 27-40. The only achievements during the Cultural Revolution include a new road as long as 5 kilometers near the Temple of the Reclining Buddha and a reservoir at Boli Ping (玻璃坪).
428 See Zhang Qixiang 张启祥 and Wang Xingguo 王兴国, Zhongguo guojia senlin gongyuan 中国国家森林公园 [The national forest parks of China], (Part 1) (Beijing: China Travel & Tourism Press, 2005), 2-3. See also Cao Huasheng 曹华生, Lyyou xue gailun 旅游学概论 [An introduction to tourism] (Beijing: Tsinghua University Press, 2005), 114. The first forest park in post-1980 China was set up at Zhangjiajie (张家界) in 1982, based on a state-owned forest.
429 Yi Haiyun 易海云 and Bai Hua 白桦, "Huashuo Baiwang Shan” 话说百望山 [A talk on the Baiwan Hill], Zhongguan Cun 中关村 3 (2006): 112-114. The kiosk on the highest peak was renovated from a former fire protection building.
431 See the official website of the Baiwangshan Forest Park: http://www.baiwangshan.com/whbl.htm
433 Ibid.
434 Ibid. For the final judgment, see Beijing shi diyi zhongji renmin fayuan 北京市第一中级人民法院, Beijing Xi Shan guojia senlin gongyuan youxian zeren gongs, disan ren Beijing Xinzhongshi jingji fazhan youxian zeren gongsi jiesan jiufen an 北京市西山国家森林公园有限责任公司、第三人北京新中实经济发展有限责任公司公司解散纠纷案, 2009, assessed on
According to these two documents, CIIC-BJ paid only 0.05 million, rather than 2.6 million according to the agreement, for the annual forest maintenance. But CIIC-BJ insisted that the best course of action was to make adjustment to the original scheme according to the requirements of the State Forestry Administration and BMCUP.


436 Beijing shi chengshi guihua sheji yanjiu yuan 北京市城市规划设计研究院, Xi Shan guojia senlin gongyuan zongti guihua 西山国家森林公园总体规划, 2006, M31/121 (Beijing Local Literature Collections), Capital Library of China.


438 In summer 2013, the author found such orchards for fruit picking mainly in the three valleys of the northern and western portions of the Western Hills Forest Plantation: Len Quan 冷泉, Baijia Tuan 白家疃, and Yang Tuo 杨坨. These valleys are relatively distant from urban Beijing and still largely agricultural.


440 See Sara M. Gregg, Managing the Mountains: Land Use Planning, the New Deal, and the Creation of A Federal Landscape in Appalachia (New Haven: Yale University Press, 2010), 152-156.
The imperial landscape of the Western Hills had plenty of water. Ever since the mid-third century, especially during the period when Beijing was the dynastic capital, Beijing’s inhabitants had tried many ways to manage the natural water system of the Western Hills. The spring water of the Jade Fountain Hill was diverted through the channels to the city and ultimately to the Grand Canal, facilitating agricultural irrigation, urban water use, and transportation. The other springs in the upper hills sustained numerous temples and villages. Meanwhile, two ditches at the eastern foot of the Western Hills kept storm runoff from damaging the flatland between it and the city. In addition to their utilitarian uses, these hydraulic facilities laid the foundation for recreational development. Developing from water courtyards in religious temples to the more elaborate waterworks in the imperial gardens of the Qing dynasty, the original hydrology of the Western Hills had been transformed to accommodate the changing needs of people living on the hillsides as well as the flatlands.

But this hydraulic system was problematic. The reason why people of that time relied so heavily on the spring water of the Western Hills was because they could not use other water sources. The Yongding River was too torrential, and the water channels linking more remote springs were often destroyed by mountain torrents before they reached the city. The lack of advanced drilling techniques made it difficult to tap deep groundwater in the urbanized area, and there was no detention facility to store rainwater throughout the year. Even the number of the drainage ditches was insufficient and a large portion of the flatlands at the foot of the Western Hills was left unprotected. In terms of
recreation development, the gardens and many religious temples were owned by the imperial court and not open to the majority of the society. In a word, the imperial hydraulic infrastructure of the Western Hills resulted from the technological backwardness and social inequality of imperial China. It was to change along with the technological and social conditions in post-1912 China.

To chart the change, I consult four sources of information. The first is the government documents concerning the hydraulic issues in the Western Hills, accessible at the Beijing Municipal Archives. But when I visited the Archives in mid-2013, the documents that were open for public research dated mainly from 1928 to 1978, and many post-1949 ones were missing. To fill in the blanks, I refer to several water conservancy annals compiled by the municipal government and three district governments (Haidian, Shijingshan, and Mentougou) between the 1980s and the 1990s. For the more recent development, I was able to find the planning and design documents of some water-related projects at Capital Library of China. Finally, the fourth source is the physical conditions of the hydraulic system as seen in 2013. Each section of this chapter looks at one type of water source, exploring how new technical methods emerged to change the ways in which people interacted with the Beijing Western Hills.

**Groundwater Crisis: From Natural Spring to Artificial Well**

The groundwater of the Western Hills had been a major source of water for imperial Beijing. The numerous springs first sustained hillside temples and surrounding rural settlements, and some also supported the operation of the northernmost portion of the Grand Canal as well as the moats and lakes of the capital city. Because there were
only five natural wells that yielded good water in the old city, the imperial family and the very wealthy had water carried from the Western Hills eight miles away to their homes for daily uses. In contrast, most poor urban residents relied on bitter water from shallow wells. But this situation began to change when in 1900 the troops of the Eight-Nation Alliance dug some deep wells (more than 10m below ground) near the Legation Quarter, and the new drilling technology gradually spread and was applied to the rest of the city.\textsuperscript{441} In 1908 the water of the Wenyu River (温榆河) was pumped, purified, and transported via pipelines to a number of taps in the city.\textsuperscript{442} Another change of the time was the abandonment of the Grand Canal in 1901 when the Qing court began relying on the sea and railways to transport grain. The canal was abandoned because the frequent civic revolts and the Western colonial invasions made it increasingly difficult to maintain the canal.\textsuperscript{443} From then on, the waterways from the Jade Fountain Hill to the old city were maintained solely in order for the imperial family to reach the Summer Palace by boat. This lasted until the death of the Empress Dowager in 1908, after which the imperial family stopped frequenting the imperial gardens outside the city.\textsuperscript{444}

Beijing reduced its dependence on the mountain groundwater from its west suburbs, but that does not mean that the latter was no longer of importance to the city. From the beginning of the Republic, urban Beijing had been suffering from the malfunction of a hydraulic system that was mostly out of repair, with channel beds choked by silt and banks collapsing. The water gates upstream near the Western Hills were raised or closed at random, so that the water in the channels downstream as well as the city moats and lakes often stood stagnant and became the breeding ground for malaria-carrying mosquitoes. In this situation, the Republican government established the
Waterway Administration Agency (河道管理处) in 1915 to take over the twenty-three water gates from the imperial household (内务府奉宸苑). The agency then dispatched its staff to take control of the gates and prevent people from dumping waste into the channels. But no money was allocated for dredging and repair, which means that the hydraulic system continued to deteriorate.

A full-blown crisis occurred after 1928. The Three Seas (北海 中南海) on the western side of the Forbidden City had been constantly reported as being dry, which hampered the pleasure-boat service, lotus planting, road sprinkling, and irrigation. The Zhongshan Park (中山公园), located further south, also encountered similar water shortage in its lakes. The crisis was caused by both the infrastructural failure and the uncoordinated water distribution between upstream and downstream (Figure 6.1). The springs of the Jade Fountain Hill yielded less water, and the leakage at the worn Qinglong Water Gate caused further loss in water volume. This limited water was first diverted to the lakes in the Summer Palace and the Old Summer Palace, the vast farmlands around which were irrigated by the water leaking from the dozens of culverts on the banks of the lakes. To the south was the Long River linking to the city moats and lakes, which was severely clogged because local people grew aquatic plants like lotus or dumped garbage in the channel beds. Noticeably, the paddy fields stretched over 600 hectares of land, accounting for more than 60% of the total water area (1030 hectares) of the entire hydraulic system (Figure 6.2).
Figure 6.1 The water uses on the upstream of the Jade Fountain Hill water system around 1928. By author, based on a municipal government document from the Beijing Municipal Archives: J017-001-00294.

Figure 6.2 The main water uses associated with the Jade Fountain Hill springs and their water areas. By author, based on a municipal government document from the Beijing Municipal Archives: J001-005-00116.
Faced with this water crisis, the Municipal Public Works Agency (北平市工务局) initiated a hydraulic improvement project in 1928 for unifying the water management and repairing the physical facilities. It first proposed to put all lock gates, culverts, and farmlands upstream under one leadership, and the existing farmlands would be measured and mapped to control irrigation and new land reclamation. The plan also suggested strengthening irrigation ditches, surveying and mapping all waterways, installing a water level ruler at each water gate, and repairing worn water gates. More importantly, the Jade Fountain Hill springs yielded little water and could scarcely be identified because weeds, silt and cinders clogged their mouths; thus the plan urged to expand the larger ones into ponds that would also receive the waters diverted from the smaller ones.

Unfortunately, the implementation of the plan was unsuccessful. The Municipal Public Works Agency was never able to get support from the other agencies of the municipal government. From the start, its attempt to extend jurisdiction over the eleven water gates was refused by the Waterway Administration Agency, which claimed that there was neither subordinating relation nor shared responsibility between the two parties. Similarly, the Summer Palace Administration Office opposed the transfer of the water gates and culverts in the Jade Fountain Hill and the Summer Palace, and would only confer with the Municipal Public Works Agency on the operation of these facilities. When they attempted to increase downward flow by temporarily closing some leaking culverts upstream, the farmers growing crops in the vicinity rose against them, arguing that farmland irrigation was a matter of life and death, while the urban lakes were merely for beautification and recreation. Under such pressure, the disputes always ended with reopening the culverts.
The maintenance work was frustrated as well. The Municipal Public Works Agency started with the two-phase work on the Jade Fountain Hill springs in May 1930: the first phase of construction was to dredge eight spring locations into ponds (each 1 foot high, 32 feet wide, and 164 feet deep) and repair two water gates; the second phase of construction was to connect all the scattered ponds into a single one as well as to rebuild two water gates with iron. With the money from the sale of the wood material of an unfinished building west of the Jade Fountain Hill that dated back to 1900, the Municipal Public Works Agency was able to complete the first phase of construction in early July. But the second phase was suspended due to financial difficulties. The extent to which this incomplete work increased the yield of the springs was doubtful, since the local chronicler Yu Qichang (余棨昌) recorded that the Jade Fountain Hills springs had been choked since 1931. Yu’s observation accorded with the government statistics showing that the rate of flow of the Jade Fountain Hills springs halved from 2 m³/s in 1928 to around 1 m³/s in the 1950s (Figure 6.3).
In general, the hydraulic improvement project during the period from 1928 to 1937 failed to revive the age-old waterways linking the Western Hills and the city. Encompassing an area of more than 1030 hectares, this hydraulic system was too costly to maintain, and it involved too many stakeholders with competing demands. At the center of debate was whether priority of water use should be given to the rural agricultural production or the scenic and sanitary needs of the city. But even if the above problems could have been solved, the system was still bound to collapse because the yields of the Jade Fountain Hill springs had been decreasing dramatically. The hydraulic system continued to deteriorate in the subsequent Second Sino-Japanese War (1937-1945) and the Civil War (1945-1949).

Because the natural outflow of the groundwater was insufficient, alternative ways of exploiting water from ground sources were explored from mid-century onward. The communist government and the local villages dug forty motor-pumped 100-meter-deep wells at the Liulangzhuang Village (六郎庄) and the Bagou Village (巴沟) in 1950-1955. These wells completely replaced the Jade Fountain Hill springs for irrigating the 2112-acre (13000亩) paddy fields adjacent to the southeast wall of the Summer Palace. With less demand on it for agricultural irrigation, together with the dredging of all the waterways and the repairing of the water gates, more spring water began to flow from the Jade Fountain Hill to the city.\(^{459}\) In 1950, the Municipal Health Agency (市卫生工程局) drilled ten more motor-pumped wells downstream of the Jade Fountain Hill springs near the north bank of the Long River between Zizhuyuan (紫竹院) and Gaoliangqiao (高粱桥), each of which was 40-50 meters deep and had a flow rate of 0.1 m\(^3\)/s. The groundwater from these flowed into the Long River and from there increased the water
flow in the city moats and lakes. These changes marked a turning point in the hydraulic relationship of the Western Hills with the rest of Beijing: the artificial wells on the plain replaced the natural mountain springs for sustaining the waterways and agricultural production in Beijing’s west suburbs. As a result, the Western Hills lost much of its importance to Beijing as a water supply, although its springs were still important for the hillside settlements in the vicinity.

If the water crisis of the 1930s could have been relieved by simply digging a few wells, then why had the stakeholders waited for two decades to do so? One reason is that people acquired better technology that allowed them to drill deeper wells of 100 meters or more and pump water mechanically, thus yielding more groundwater of better quality. In comparison, the wells dug in the 1900s were only 10 meters deep, and the artesian wells dug in the 1940s were just 30-40 meters deep. And even those relatively shallow wells were limited in number before 1950s, serving mainly the urban area.

The motor-pumped wells in the Western Hills and its vicinity that were dug during the years from 1957 to 1985 reached the number of 4153, with 3613 in the Haidian District, 183 in the Shijingshan District, and 357 in the Mentougou District. The high intensity of well drilling coincided with Beijing’s droughts over the same period. These wells first appeared near city and then spread into its outskirts, and well drilling occurred earlier and more in the areas closer to the city received earlier (Figure 6. 4). The particularly high intensity of well drilling at the eastern foot of the Western Hills was also because this area was the alluvial fan of the Yongding River that had the most abundant groundwater.
Figure 6.4 The number of new motor-pumped well at Haidian District, Shijingshan District, and Mentougou District from 1957 to 1985 (Source: *Beijing shuili zhi gao*, Vol.2, 162-163)

In the western part of the Western Hills, residents in the Junzhuang Town (军庄镇) began to dig motor-pumped wells for the first time in 1965, some of which were sunk through mountain rocks to pump water from 240 meters below ground. By the end of the 1980s, the villages in the upper hills, such as Xincun (新村) and Mengwu (孟悟), entirely relied on such wells. This widespread use of artificial wells brought fundamental
changes to an area that had historically had an abundance of springs, as people were no longer restricted by natural flows. The availability of more clean water intensified agricultural, industrial, and residential development of the Western Hills and its vicinities.\textsuperscript{466}

The proliferation of artificial wells increased the availability of water for utilitarian use, but it was a critical factor in the decline of the natural springs in the Western Hills. As far as the seven largest springs are concerned, the decline began in the late 1950s and then accelerated after the 1970s (Table 6. 1). The landmark event was the complete disappearance of the Jade Fountain Hill springs in 1975, which put an end to the long history of the Western Hills as the main water head for Beijing.\textsuperscript{467} Government statistics show that the groundwater level adjacent to the northern foot of the Western Hills (near the Shahe River 沙河) dropped 14 meters from 1963 to 1985, while that adjacent to the southern foot (near Gucheng, 古城) dropped 20 meters from 1959 to 1983.\textsuperscript{468} It is not surprising that few natural springs in and around the Western Hills and survived such dramatic decline in groundwater level.\textsuperscript{469}

In addition to well drilling, some other factors, such as coal mining, reservoir construction upstream and long drought also depleted the groundwater that fed the springs. For example, the two springs (双清泉, 卓锡泉) in the former Imperial Hunting Ground (now the Fragrant Hill Park) dried up in 1972, a depletion that had started in 1969 when because the local community (海淀区工交局, 四季青公社) opened two coal mines on the hillside adjacent to the Temple of the Azure Clouds, pumping and draining a large quantity of groundwater. The Western Hills Scenic Area Administration Office (西山风景区管理处) soon called for an end to coal mining because the spring water was
of vital importance to the plant irrigation, water pools, and overall scenic quality of the adjoining historic sites. It also claimed that the issue was relevant to diplomatic affairs because so many foreign visitors frequented the former Imperial Hunting Park and the Temple of the Azure Clouds after Nixon’s 1972 visit to China. Although the two mines were closed later that year, the springs could not be restored immediately. When the local people attempted to relieve water shortage by drilling wells near the two historic monuments, the municipal government refused to give permission and argued that well drilling might harm the springs as much as coal mining. By the time the author visited the area in 2013, the two spring streams were flowing smoothly and their waters were collected in the two ponds below (静翠湖; 眼镜湖) to improve the scenery.

Table 6.1 The condition of the major springs in the Western Hills (Source: Beijing quan zhi, 17-32)

<table>
<thead>
<tr>
<th>Location</th>
<th>Geological structure</th>
<th>Condition</th>
<th>Cause of drying-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Jade Fountain Hill (玉泉山)</td>
<td>Limestone</td>
<td>Dried up in 1975</td>
<td>Welling drilling; coal mining; long drought. Groundwater recharge decreases due to the construction of the Guanting Reservoir.</td>
</tr>
<tr>
<td>2 Cherry Gully (樱桃沟)</td>
<td>Calcareous sand stone</td>
<td>The outflow could not reach beyond the Temple of the Reclining Buddha in 1980, but never dried up</td>
<td>Long drought; well drilling</td>
</tr>
<tr>
<td>3 Temple of the Azure Clouds (碧云寺)</td>
<td>Sandstone</td>
<td>The southwest spring dried up in 1965; the discharge of the north spring greatly decreased in 1981</td>
<td>Coal mining; well drilling</td>
</tr>
<tr>
<td>4 Fragrant Hill (香山)</td>
<td>Sandstone; shale</td>
<td>The discharge greatly decreased in drought season, but never dried up.</td>
<td>Well drilling</td>
</tr>
<tr>
<td>5 Eight Great Sites (八大处)</td>
<td>Sandstone; shale</td>
<td>The discharge fluctuated seasonally, but never dried.</td>
<td>Well drilling</td>
</tr>
<tr>
<td>6 Black Dragon Pond (黑龙潭)</td>
<td>Limestone</td>
<td>The natural outflow stopped in 1966; no water could be pumped up in April 1984</td>
<td>Well drilling</td>
</tr>
<tr>
<td>7 Long’en Temple (隆恩寺)</td>
<td>Sandstone; shale</td>
<td>The discharge steadily decreased; abandoned in 1981</td>
<td>Well drilling</td>
</tr>
</tbody>
</table>
Because the decline of natural spring had devastating impacts on historic sites situated beside former natural outlets, local people have engineered the costly restoration of the spring scenes of some historic sites recently for the sake of cultural tourism. This phenomenon is best seen the water circulation system installed in the Chinese Seal Valley (中华精印谷) of the Eight Great Sites that restores the disappeared spring stream scene that was once ranked among the top scenic viewpoints of the Western Hills (Figure 6. 5). Completed in 2004, the system includes a 1000-cubic-meter pond created between the Chinese Seal Valley (中华精印谷) and the Yingcui Lake (映翠湖), which is filled up with water from below the Western Hills. The water of the pond is pumped up to the upper valley via a 400-meter-long underground pipeline and then cascades down to the pond, and excess runoff is released to the Yingcui Lake below through the pond spillway and two drops.\(^{472}\) This artificial system might be a welcome change for those who care more about historic preservation and tourism, but the fact that it consumes so much water from elsewhere is problematic, especially considering the inevitable water losses due to evaporation and seepage. This case illustrates the contradiction between the decline of natural springs and the rise of cultural tourism in the post-1980s Western Hills.

The change from natural spring to artificial stream in the Western Hills has severed the historical bond of the Jade Fountain Hill springs with the plains area to the east, and it has also negatively impacted historic characteristics of the Western Hills. Even for those who do not care about historic preservation, this also poses a great threat because the decline of groundwater has resulted in the abandonment of many wells and caused increasing difficulty pumping water.\(^{473}\) In some areas, the overexploitation has even caused the water table to shift into a cone of depression and the soils to fall
While promoting faster groundwater exploitation, the modern technology of well drilling and pumping also made manifest the limitation of that water source. Therefore, more water sources will have to be found or the existing quantities used more cautiously and efficiently.

Stormwater as Both Threat and Opportunity

Rain is an alternative water resource to groundwater, but its utility depends on rainfall rate and ground condition. In Beijing, 85% of the annual precipitation comes from June to August when the monsoon reaches northern China, and summer rainfall is usually intense due to active cyclones. After falling onto the slopes of the Western
Hills, storm runoff rushes down to the surrounding lowlands in large amount and at high speed. To prevent hillside runoff from rushing down to the imperial gardens and their surrounding paddy fields, the Qianlong Emperor of the Qing dynasty ordered the construction of two drainage ditches (the North Ditch 北旱河, 6 km; the South Ditch 南旱河, 17 km) at the eastern foot of the Western Hills in 1773. Along the east side of the South Ditch was a dyke for further flood control, and the natural pond of Yuyuantan (玉渊潭) that originally formed from groundwater outflow was expanded as a water detention basin, as explained in Chapter One. For the Qing rulers, it was already difficult to drain such flash flood in appropriate ways, let alone to save it for future use.

This problem continued to haunt Beijing after the revolution of 1911. The foremost issue was deterioration of the two drainage ditches and the subsequent conflicts among different stakeholders. In the summer rainstorms of 1925-1929, the hillside torrents destroyed the dyke in the upstream of the South Ditch, causing a dozen villages near the Xiaotun Village (小屯村) to be inundated for two months. The floods occurred also because natural accumulation of silt and crop planting in the ditch bed had clogged the entire ditch. The three main stakeholders along this ditch soon pressed their different demands: the Temple of the Azure Clouds Vigilante (碧云寺维持会), located at the head of the ditch wanted to continue planting wheat in ditch bed; the Fragrant Hill Village (香山村) a little downstream wanted to dredge the ditch and add to it a new branch ditch leading to the former Imperial Hunting Park (红山头); and the Agricultural College of Peking University argued that the upper ditch should not be dredged until the
lower one received the same treatment, otherwise its paddy fields further downstream near Yuyuantan (玉渊潭) would be inundated instead (Figure 6.6).477

![Diagram of North and South Ditches during the republican period](image)

**Figure 6.6 The North and South Ditches during the republican period (by author)**

The Municipal Public Works Agency decided that the permanent solution to the crisis of the South Ditch was to survey the entire drainage system, decide the cross and vertical sections, and dredge and straighten the ditches accordingly. However, the agency lacked sufficient budget to support such comprehensive work, and instead merely planned to dredge a 5760-meter-long section of the upper South Ditch and to repair three broken dyke banks of the South Ditch (136 meters long in total) as well as another three of the North Ditch (313 meters long in total). Worse still, it could merely dredge that
section of the South Ditch to half of its original 16-meter width (Figure 6.7). But even this plan failed due to labor shortage, and by May 1934 only the section between Wan’anli (万安里) and Pingpozhuang (平坡庄) had been dredged. Also frustrating was the effort to forbid crop planting in the ditch bed. Ordering that crop planting occur at a distance of at least 3.33 meters from the ditch bank, the agency made a concession in 1931 to open those undredged sections of the ditch bed for farming. Apparently the municipal government was financially and administratively too weak to implement its policies.

![Figure 6.7 The designed cross section of the upper South Ditch according to the plan of 1930 (redrawn by author, based on: J17-1-503, Beijing Municipal Archives)](image)

While ditch drainage remained as the main technical approach to storm runoff from the Western Hills, the republican period also saw the emergence of rainwater-harvesting ideas. Early in 1928 when the crisis of the Jade Fountain Hill springs occurred, the Municipal Public Works Agency proposed using the Gaoshuihu Lake (高水湖) at the
southeastern foot of the Jade Fountain Hill as a water retention basin. Capturing diverted stormwater runoff from the slopes of the adjoining hill, this basin was expected to collect rainwater and thus compensate for the diminished quantity of spring water.\footnote{481} After the devastating flood occurred in the middle and lower reaches of the Yangtze River in 1932, this proposal was further justified as necessary for reducing flood volume downstream. The municipal government thus ordered that the existing paddy fields in the Gaoshuihu Lake as well as the adjoining Yangshuihu Lake (养水湖) be abandoned and the two lakes be dredged. However, the order met fierce resistance from local peasants who questioned the relevance of farming to flooding and stated the importance of those farmlands to the local economy. As a concession, the municipal government had to allow farming until the dredging work began.\footnote{482} But that work never started due to the weakness of the republican government as well as the subsequent World War II; by 1946 both of the lakes had been completely filled up and planted with crops.\footnote{483}

During the same period, the municipal government also discussed another more ambitious proposal to make use of storm runoffs from the Western Hills. In 1935 a municipal technical official proposed building a dam below the Fragrant Hill, the valley area behind which then became a reservoir to store hillside torrents. He also suggested installing six floodgates downstream of the South Ditch where the slopes were steep so as to control water levels and flow rates as well as to further collect mountain torrents along the way. These facilities together were expected to save enough monsoon rainwater to sustain 5504-acre (33500亩) paddy fields in the vicinity that were lower than the ditch bed (elevation: 55m), with rainwater diverted through 190 culverts under the ditch banks. Extra rainwater could also help wash the city moats and improve the saline-alkali lands
southwest of the city. The resultant safety and prosperity would attract more visitors to
the eastern foot of the Western Hills that was already a world-renowned tourist
destination. \(^484\) In a word, the vision turned the threat of mountain torrents into
opportunities for the regional development, with the creation of a dam reservoir as the
key.

Like its precedents, this ambitious proposal also met with failure. Realizing that
reservoir construction had been a method widely adopted in Western countries and
applicable in the case of the Western Hills, the Municipal Public Works Agency pointed
out that China still not yet mastered the relevant techniques and had no funds for mass
construction. Without a reservoir, the proposed floodgates and culverts would be of little
use because the narrow ditch alone could not store much water. The agency suggested
instead digging wells for irrigation that could provide a more stable water supply, and
dredging the South Ditch for the purpose of flood drainage only. \(^485\) Neither the reservoir
scheme nor the dredging work was done due to the subsequent Japanese occupation of
Beijing in 1937-1945, and, as a result, the summer storms of 1939 and 1942 caused
severe flooding at the eastern foot of the Western Hills. The Xiaotun Village (小屯)
suffered most not only because its elevation was particularly low, but also because a
bridge collapsed to block the flood flow in the ditch, a section of the dykes was broken by
motor vehicles trespassing through the ditch, and the ditch bed silted up due to wheat
planting. \(^486\) Still, the puppet municipal government only repaired a few broken sections of
the dyke near the West Suburb Airport, leaving the rest in the hands of the local
peasants. \(^487\) By the mid-twentieth century, no complete maintenance had been conducted
at the imperial drainage system, let alone the construction of any new facility.
Thus in the early days of PRC, the Western Hills continued to pose flooding threat to Beijing. In the 1951 plan for the waterways of suburban Beijing, the new municipal government determined that the general principle of rainwater management should be to increase the capacity of flood storage in the upstream and that of flood discharge in the downstream. The plan particularly required the restoration of the water body of Yuyuantan (610,000㎡ in surface area) to hold 1,170,300 m³ of water during heavy rainfall.\(^{488}\) Accordingly the municipal government abandoned the paddy fields and conducted dredging gradually in 1951, 1955, and 1964.\(^{489}\) Meanwhile, the flow rates of the South Ditch up and down Yuyuantan were increased to 47m³/s and 20m³/s respectively due to the adjustment of the vertical alignment, the remodeling of the Xiaotun Bridge that blocked drainage, and the dredging of the ditch bed.\(^{490}\) As for the North Ditch, the biggest change occurred in its downstream. From 1977 to 1985, the Qing River (清河) was straightened in seven stretches and thus shortened by 4.3 km to facilitate flood discharge, and then seven floodgates were built along the ditch to control water level and facilitate irrigation.\(^{491}\) With these measures, the imperial drainage system was restored almost to the same function as it had in the eighteenth century.

The same period also saw the emergence of a new pattern of mountain torrent management, the basic method of which was to install check dams across each gully. Check dams diminished the velocity of water flow in general and created large reservoirs in suitable locations. This kind of system first appeared in the southern part of the Western Hills where there were seven main gullies. Aiming primarily at increasing water supply to the hillside settlements in the vicinity, three dams were constructed one after another on two gullies since the late 1950s, creating the Lalahu Reservoir (拉拉湖水库).
and the South Horse Ranch Reservoir (南马场水库) on one gully and the Long’en Temple Reservoir (隆恩寺水库) on the other (Figure 6.8). So far only the second one still serves as water source, whereas the other two cannot hold water for long due to severe seepage.492 The South Horse Ranch Reservoir stands 290 meters above sea level and had a 0.9-square-kilometer catchment area (Figure 6.9). A catchment area of 1.1 sq. kilometers to the north was also dammed and its water diverted to the reservoir.493 Excess rainwater flowed via the seven gullies that had been straightened, widened, and paved during the same period to either the Yongding River or the urban sewage system.494

Figure 6.8 The storm-water management system in the southern portion of the Western Hills up till 2012 (by author, based on Shijingshan District Water Conservancy Annals, 61)
In comparison, the northern part of the Western Hills features a stormwater system in which all gullies lead to one single reservoir. This reservoir is situated in the lowland of the Shangzhuang Village (上庄村), six kilometers north of the Western Hills, where multiple natural gullies from the Western Hills and the Taihang Mountains converged (Figure 6.10). In the past this area became inundated with every monsoon rain but suffered drought for the rest of the year. The construction of a 19-tunnel floodgate down the converging point of the four gullies in 1960 created a 164-acre (1000亩) reservoir with a storage capacity of 2280000m³ near the Shangzhuang Village.495 Three decades later, the installation of another rubber dam (2.5m high, 80m wide) downstream of the first dam near the Dongyuhe Village (东玉河村) increased the capacity of the reservoir to 600,000m³.496
The municipal government also dredged all the gullies, paved them with stone, and them equipped with ladders and siphons. For the purpose of water and soil conservation, it installed numerous small check-dams made of stone, earth, or concrete on the upper gullies (Figure 6.11). As a result, the northern foot of the Western Hill becomes productive and safe.
Contemporary visitors to the Western Hills will thus find three different stormwater management systems: an old one from the late eighteenth century and two others created after 1949 (Figure 6.12). Chronologically the three show how ideas and techniques concerning hillside runoff changed over time. The most noticeable change is undoubtedly the increasing extent and scale of rainwater retention for the dual mission of flood control and water supply. The two ditches at the eastern foot of the Western Hills were only for flood discharge, and the pond of Yuyuantan was originally designed to temporarily hold a set amount of water while slowly draining to the city moats. In comparison, the three dam reservoirs in the southern part of the Western Hills hold storm runoffs on the upper hills, which are later used as water sources. But this system is limited in its capacity of rainwater storage due to the fact that only three individual
gullies are under control, and that two reservoirs are leaking. It is the construction of the Shangzhuang Reservoir that shows how runoffs of a large drainage basin could be mostly collected and reused. For a region like Beijing that has a serious water scarcity, this type of water source is precious.

Figure 6.12 The rainwater management systems in the southern, eastern, and northern parts of the Western Hills from the Qing dynasty to present (by author)

Today many of these hydraulic facilities are also part of the recreational development of the Western Hills. At the eastern foot of the Western Hills are at least three golf courses, one agricultural sightseeing garden, and four parks built around such facilities. Except for Yuyuantan, they were all developed since the 1980s. Similarly, at the northern foot of the Western Hills are the Rice Fragrant Lake (稻香湖) and the Green Lake Wetland Park (翠湖) around the Shangzhuang Reservoir and the Hot Spring Rural Park (温泉郊野公园) on the upper portion of a gully (Figure 6.13). The most common in these projects is to dig new retention basins along the gullies or around the reservoir, which then collect stormwater from the existing hydraulic infrastructures to create
waterfront spaces. But such development is problematic because the rainfall in Beijing is concentrated in summer and these basins then have to be replenished by water from elsewhere for the rest of the year. For example, the water bodies at Yuyuantan rely heavily on the Guanting Reservoir (官厅水库) and the Miyun Reservoir (密云水库) far away. In the Green Lake Wetland Park (翠湖), former wastewater that has been treated to remove pollutants serves as a main water source when there is no rain. Although helpful for flood control and rainwater retention, these water retention basins eventually consume much more water than that they save. For this reason, some projects, especially golf courses enjoyed only by the privileged, have stirred widespread controversy and even been cancelled.

Figure 6. 13 The storm-water system in the eastern portion of the Western Hills (by author)
In addition to the problem of water consumption, the recreational development associated with the hillside rainstorm systems is problematic. The danger of flash floods from the Western Hills has not been eliminated by the construction of the modern hydraulic facilities and in a summer 2006 rainstorm, mountain torrents caused severe flooding at the eastern foot of the Western Hills. In the most low-lying area between the Fragrant Hill and the Jade Fountain Hill, the water submerged the Xiangquan Roundabout (香泉环岛) and rushed into the Pu’andian Nursery (普安店苗圃) and the library of the Chinese Academy of Sciences’ botanic garden (南植). Some upper areas like Jiewangfu (杰王府) and Shuangxinzhuang (双新庄) were also inundated because their gullies were blocked. The 2006 disaster warns us that the Western Hills can threaten its surroundings if the weather becomes severe or the hydraulic infrastructure does not work properly. Therefore, the management of mountain torrents has to remain focused on efficient and effective discharge and retention.

**Water Diversion across the Hillside**

Besides the lack of advanced techniques to dig deep wells and control rainstorms, another reason why Beijing historically depended so heavily on the Jade Fountain Hill springs was because surface water sources further afield were difficult to divert. The terrain of Beijing descends from northwest to southeast, and the basins of the Sha River (沙河) and the Qing River (清河) lie between the old city and the springs at the foot of the Taihang Mountains and the Yan Mountains. Thus the Baifu Channel by the Yuan dynasty rulers flowed alongside the Western Hills and the mountains further northwest at a height
of 50-52 meters above sea level and finally reached the western outskirts of the old city. Despite having taken advantage of natural topography and avoided barriers, this channel was frequently destroyed by mountain torrents and it finally had to be abandoned. This failure meant that the abundant waters of the Chaobai River (潮白河) further northeast was not available because it had to be carried along the same way. It was not until the second half of the twentieth century that people in Beijing solved the problem as part of systematic surface water management at a regional scale. The Yongding River Channel (永定河引水渠) and the Jingmi Channel (京密引水渠), two water diversion channels passing alongside the Western Hills, are the achievements of that period.

The two channels are constructed together with the massive engineering projects on the Yongding River and the Chaobai River. Originating from the mountains that surrounded the old city from the southwest to the northeast, both rivers were notorious for their flash floods and uncontrollable course changes before the mid-twentieth century. In the 1920s the schemes to dam the two rivers for flood control and water supply emerged under the influence of the Western hydraulic sciences, but the socio-political instability, economic depression, and incessant warfare in the republican years allowed no mass construction. It was only when the communist party took power that such schemes came true. Since 1951, seven valley-dammed reservoirs have been constructed on the upper Yongding River and its tributaries, the largest and uppermost of which is the Guanting Reservoir (官厅水库), built in 1954. A little later in 1958 the upper Chaobai River and its tributaries also began to be dammed, and the Miyun Reservoir was the largest among five reservoirs that emerged there by 1978.
construction of these dam reservoirs on the upper Yongding River and the Chaobai River between 1951 and 1978 created conditions for that of the two channels (Figure 6.14).

![Diagram of damming and diversion of the Yongding River and the Chaobai River](image)

**Figure 6.14 The Damming and Diversion of the Yongding River and the Chaobai River (By author)**

Now that the dams and reservoirs were in place, the next step was to choose the appropriate course for water diversion. The Yongding River Channel, a 25.13-kilometer concrete conduit, carries water from a sedimentation basin behind the Sanjiadian Dam (三家店拦河坝) through the southern foot of the Western Hills to the middle South Ditch,
with the 5.12-kilometer Shuangzi Branch Channel (双紫支渠) linking to the South Long River (南长河) at the Zizhuyuan Park (紫竹院公园) for replenishing the Sea Palaces. The Western Hills influences the selection of this course. The channel starts at Sanjiadian because the area further up is the narrow mountain gorge between the Western Hills and the Taihang Mountains is too narrow for channel construction. Also the area between Sanjiadian and the Shijingshan Hill (石景山) was full of factories and roads, and the riverbed south of the Shijingshan Hill was as high as the surrounding plain and thus dangerous to open outlets on the river bank. In addition, the section east of the Western Hills had to be moved southward to protect the glacial scratches 200 meters to the north. This new course was also expected to beautify the western part of the expanded city and facilitate urban recreation.506

The 112.7-kilometer Jingmi Channel became associated with the Western Hills for other reasons. Starting at the Miyun Reservoir (密云水库), the channel is replenished at the Huairou Reservoir (怀柔水库), flows west through the southern foot of the Yan Mountains, turns south through the eastern foot of the Taihang Mountains, turns east through the northern foot of the Western Hills, and continues south to the Kunming Lake of the Summer Palace, with the Shuangzi Branch Channel (昆玉河) linking to the Yuyuantan Lake. This channel also avoids the basins of the Sha and Qing Rivers (like the Baifu Channel of the Yuan dynasty), not because the engineers of the 1950s and 1960s could not construct a straight channel directly from the water sources to the city, but because they were afraid that such a course might cause severe salinity in the two basins due to the high water table. On the other hand, the vast rural lands north of the Western Hills, about 38.57 square miles (150,000亩) in total, could be irrigated if the channel
followed the detoured course. Such a course could also link a number of scenic spots at the mountain foot like the Summer Palace, the Black Dragon Pond, and the Hot Spring.\textsuperscript{507} As a result, the Kunming Lake becomes the first large water body that the channel reaches after bypassing the two basins, from which the water is further transferred along either the South Long River or the Shuangzi Branch Channel to downtown Beijing.

Despite the differences, the Yongding River Channel and the Jingmi Channel share two key technical issues. One is the issue of slope: each channel starts at high elevation and flows to the plain at low elevation, and the water could reach high velocity and cause erosion. Therefore, the engineers stabilized the grade of the Yongding River Channel by installing eleven drop structures, the total height of which was about 55 meters. Two highest drop structures, one at the east side of the Moshikou Tunnel (30 meters in height) and the other south of the Yuyuantan Park (6.5 meters in height), were each turned into a power station. As a result, most of the channel is at gradients of 0.058 to 0.0755 percent so that water can flow smoothly (Figure 6.15).\textsuperscript{508} For the Jingmi Channel, the engineers installed seven drop-structures at the upper half section to make the channel descend at 0.005 to 0.025-percent grade, while the rest section followed the natural contours of 50 to 53 meters above sea level at 0.0059-percent grade without abrupt drop. In this way, they handled the 37-meter elevation difference between the starting and ending points, of which the steepest section occurred between the Gongzhuangzi Village and the Xicui Village (西崔村) in a descent of 34 meters.\textsuperscript{509}
Another challenge was to protect the channels from mountain gullies along the way, factor that had caused the failure of the Baifu Channel in the Yuan dynasty. The twentieth-century engineers adopted two methods to address this issue. The first was to use three types of crossing structure where a gully needed to be crossed: flume when a channel was higher than a gully; culvert when a channel was lower than a gully; and inverted siphons when the channel was at the same level as a gully. The Jingmi Channel has fifty-seven gully crossing structures in total, of which eight were at the foot of the Western Hills: four flumes, two culverts, and two inverted siphons. In this way the storm-water drainage system in the northern portion of the Western Hills was mostly separated from the channel. The upper section of the Yongding River Channel was treated similarly, with two flumes at the west side of the Moshikou Tunnel and one culvert at the
other side. But the section from the Eight Great Sites Gully (八大处山洪沟) downwards also served as a flood discharge ditch during monsoon season, and gully torrents could flow into the channel through the inlets on its northern bank.511

The second method coincided with that of stormwater management already discussed in the previous section: to reduce water runoff downhill by constructing check-dams above gully heads. The first time it became a strategy for water diversion was in 1928 when the Municipal Public Works Agency planned to facilitate urban Beijing’s navigation by transferring water from the Yongding River, and proposed damming the gullies between Sanjiadian and Mayu (麻峪) to protect the channel.512 This was not fulfilled until the construction of the South Horse Ranch Reservoir, the Long’en Temple Reservoir, and the Lala Lake Reservoir from 1957 to 1979. Although intended principally to mitigate the water shortage on the hillsides, these three reservoirs did play a part in protecting the Yongding River Channel. For the Jingmi Channel, the same method was mostly applied to the upper section where the mountains were much higher. Except for the Miyun Reservoir and the Huairou Reservoir (怀柔水库), all the other eight reservoirs, constructed between 1958 and 1978, along the channel are mainly for gully control.513

One problem remained: if the two channels flowed directly into the water bodies in the Summer Palace and the Yuyuantan Park, the water level fluctuations of the latter would affect tourist activities like boating, fishing, swimming, or just sightseeing. This problem was addressed by separating the channels from the water bodies. At the Yuyuantan Park, the Yongding River Channel flowed along a new waterway south of the existing East Lake and West Lake, a section of which was expanded into the 8.32-hectare Bayi Lake (八一湖) for flood control.514 The water was further diverted to create a few
ponds in the Diaoyutai State Guesthouse (钓鱼台国宾馆) in 1959 as well as the Cherry Lake (樱花湖) in the northwest corner of the Yuyuantan Park in 1989. All these water bodies were interconnected so that the Yongding River Channel could help sustain the lake water levels in the park and the guesthouse during drought season without causing water level fluctuations, while the park could still facilitate flood detention when rainstorm came (Figure 6.16). Along with the construction of this hydraulic system came various recreational developments: water-skiing and swimming in the Bayi Lake, boat tours between the Western Lake and the East Lake, the Cherry Garden on the earth mound of the southwestern dyke, the Young Hero Monument on the earth mound between the West Lake and the Bayi Lake, and the playgrounds and forest cabins on the southern bank of the East Lake.
Such combination of water diversion, flood control, and water recreation was also seen in the relationship between the Jingmi Channel and the Summer Palace. This channel flowed along the North Long River (北长河) through the northwest lake of the Summer Palace (renamed Tuanchenghu 池城湖 in 1975) to a new channel linking the South Long River. The water was then diverted to the Kunming Lake, the main area of water recreation, through the new Yihe Gate (颐和闸) according to the required lake elevation. The spring water from the Jade Fountain Hill was transferred via a pipeline below the channel to the Kunming Lake. The Anhe Gate (安河闸) replaced the Qinglong Gate (青龙闸) to control flood discharge of the entire area, and the North Long River still served as a drainage ditch for rainstorms. Ever since the above construction, the Summer Palace has been mostly dependent upon the Miyun Reservoir for water supply, especially after the Jade Fountain Hills springs dried up in the 1970s. Due to its roles in these hydraulic projects, the Summer Palace today remains the most important hub of Beijing’s water supply despite the decline of its original water source (Figure 6. 17).

The completion of the Yongding River Channel and the Jingmi Channel as well as the numerous related reservoirs has mitigated Beijing’s water shortage and greatly promoted the regional economic development. But ironically Beijing’s water shortage has persisted due to increasing water consumption and climate change. For example, the Guanting Reservoir dried up during years of drought in the 1980s, causing a crisis in the area at the southern foot of the Western Hills. The response was to pump water from the Summer Palace’s northwest lake to the Mentougou District. Eleven years later the Jingmi Channel stopped providing water for irrigation, and 5000-hectare paddy fields along its way were replanted with less-thirsty fruit orchards and seedling nurseries
supported by sprinkling or drip irrigation. Of course it is difficult to reduce all water uses in a short time, and in 2003 the more ambitious South-to-North Water Diversion Project began with the goal of carrying water from the Yangtze River in southern China to the Summer Palace’s southwest lake and then the rest of Beijing. It is uncertain whether this unprecedented-scale project will really bring an end to Beijing’s water shortage—especially since as the supply problem is resolved, the demand rises in response—but surely the hydraulic landscape of the Western Hills will continue to evolve along with it.

Figure 6.17 The Summer Palace after the construction of the Jingmi Channel, 1966 (by author)
Summary

In the century since the collapse of the monarchy, the Beijing Western Hills has experienced many changes of its hydraulic system. This transformation started with the crisis of the imperial hydraulic system. On the one hand, the spring water of the Jade Fountain Hill could no longer meet Beijing’s water demand due to the intensification of agricultural production near the Summer Palace and the poor maintenance of the previous water diversion infrastructure. On the other hand, the North and South Ditch also fell into disrepair and subsequently led to the frequent floods at the eastern foot of the Western Hills during monsoon season. This dual crisis of water supply and flood control was then addressed in the second half of the twentieth century by the construction of artificial wells, rainwater retention basins, and river dam reservoirs all over Beijing, which alleviated the crisis but brought a new set of problems. At the Western Hills, the upside is that hillside runoffs are largely controlled and turned into recreational opportunities and water sources that contribute a lot to the development up and down the hills. The downside is the decline of the natural springs due to groundwater over-exploitation, which poses a threat to the historic sites that formerly featured spring streams. The subsequent restoration of the spring scene—for purely visual reasons—was controversial.

The driving forces behind this century-long hydraulic transformation are not the same as those that occurred before 1912. The need to increase water supply and control mountain torrents was nothing new, but most previous efforts to conquer the natural hydrology were unsuccessful, and by the end of the monarchy the old city relied on only one diversion channel linking the Jade Fountain Hill to sustain the urban waterways and two drainage ditches at the eastern foot of the Western Hills for safety. Thus the post-
1912 transformation is distinctive for its great advancement in hydraulic technology that enabled effective control and use of groundwater, stormwater, and river water. This progress included deep-well drilling and pumping, gully and river damming, and long-distance diversion through hillside.

The technological progress had a powerful impact on social conditions in Beijing and China as a whole. First, the application of technology to the physical landscape requires social organization of capital and labor. Most hydraulic principles and methods seen in the Western Hills today had already appeared in the various schemes of the republican period, but their realization had to wait until the aggressive communist party took power, established a centralized government, and mobilized people from all walks of life to participate in national modernization projects. Second, the projects that seemed to solve existing water shortage simply created new water demands that necessitated more such projects. The demand-supply mechanism still affects Beijing, which nowadays still needs water from South China even after investing in so many wells and reservoirs in the region. The future hydraulic transformation of the Western Hills, including both the continual application of the existing technologies and the adoption of new ones, will still be determined by these two social factors.

Last but not least important, these hydraulic projects are full of contradictions with respect to historic preservation and recreational development. In places of historic importance, the key issues are authenticity, integrity, and tourist attraction. For example, the Jingmi Channel, although well designed according to the standards of engineering in the 1960s, greatly altered the Summer Palace when it passed through, even although the water level of the Kunming Lake was carefully maintained to allow water recreation. The
changes in the water source, water gate and waterway have affected not only the internal water flows of the Summer Palace but also its relationship with the larger setting. If this channel had been built after China ratified the 1972 UNESCO World Heritage Convention in 1985, it would probably have been recognized as a threat to the preservation of the Summer Palace. Similarly, the proliferation of deep mechanical wells undeniably brings great benefits to those who suffer from water shortage, but the resultant decline of groundwater level harms the integrity of the spring streams that are important for the character of the historic sites. In places with no valuable historic association, problems often occur where hydraulic facilities not originally designed for tourists are subject to recreational development, as seen in the Cuihu Wetland Park where stormwater alone cannot sustain the water levels all year around and processed wastewater has to be provided.

Despite these contradictions, the Beijing Western Hills’ hydraulic system is bound to be more closely associated with heritage practices and recreational development in the near future along with the rise of mass tourism in China. This will certainly create many new design opportunities that require integrated approaches. If landscape architects want to take part, they will have to understand what these infrastructures were originally built for and how their previous conditions can be appropriately adapted to new functions.

Notes

The Wenyu River was chosen because of its proximity to the old city and abundance of clean water. In comparison, the high-quality spring water of the Western Hills was limited in quantity, while the Yongding River and the Chaobai River were relatively distant and muddy.


The gate stations were at Qinglong (青龙), Guangyuan (广源), Gaoliang (高粱), Songlin (松林), Xiyaqiao (西压桥), Beihai (北海), Nanyuhe (南御河), Fucheng (阜成), Yongding (永定), Zhengyang (正阳), and Datong (大通). See Wu tingxie 吴廷燮, *Beijing shi zhi gao* 北京市志稿 [Beijing municipal annals], Volume of Establishment (1940; reprint, Beijing: Yanshan Press, 1998), 258-263.

Municipal government document, *Beijing hedao qingxing jielue*, 北平河道情形节略, 1928, J017-001-00294, Beijing Municipal Archives. Except during the years from 1924 to 1928 when it was temporarily merged into the Civil Works Agency existing right into the KMT period.

At that time, the eleven lock gates and the Rice Field Farm (稻田场) were under the jurisdiction of the Waterway Administration Agency (河道管理处), while the Summer Palace Administration Agency (管理颐和园事务所) was in charge of the gates and culverts within the confines of the Jade Fountain Hill, the Summer Palace, and the Old Summer Palace. See Beiping tebie shi gongwu ju 北平特别市工务局, "Yuquan yuanliu zhi zhuan kuang ji zhengli dagang jihua shu“玉泉源流之状况及整理大纲计划书 [The situation and management scheme for the Jade Fountain Hill Springs], Zhonghua gongchen shi xuehui huibao 中华工程师学会会报 [Journal of the Chinese association of engineers] 15/9-10 (1928).

These strategies were reiterated in J001-005-00116.

Municipal government document, Beiping shi hedaoyihao shezheli plan 北平市河道整理计划, 1934, J001-005-00116, Beijing Municipal Archives.

The eight spring were located at Shuicheng Guan (水城关), Shimu Quan (十亩泉), Jiangu Lin (坚固林), north of Jiangu Lin, Liebo Hu (裂帛湖), Hanyun Zhai (涵云斋), Bengzhu Quan (迸珠泉), and Yongyu Quan (涌玉泉). The two water gates are Wukong Zha (五孔闸) and Shuicheng Guan (水城关).

For the information about the implementation of the two-phase project, see Zhang Baozhang 张宝章, Jingming Yuan shuwang 静明园述往 [A recollection of the Jingming Yuan palace garden] (Beijing: Central Literary Contribution Publishing Bureau, 2012), 136-137.

Yu Qichang 余棨昌, Gudu bianqian jilue 故都变迁记略 [Notes on the transformations of Beijing] (Guangwen Bookstore 广文书局, 1941; reprint, Beijing: Yanshan Press, 2008), 152.
Li Yuhong, "Hanyang jing xi diaxia shuiyuan, huifu Yuquan Shan qianliu" 涵养京西地下水源, 恢复玉泉山泉流 [Conserving the groundwater west of Beijing, restoring the Jade Fountain Hill springs], *Beijing guihua jianshe* 北京规划和建设 [Beijing city planning & construction review] 6 (2004): 162-165.

Beijing shuili shizhi bianji weiyuan hui 北京水利史志编辑委员会 *Beijing shuili zhi gao* 北京水利志稿 [Beijing water conservation annals draft], Volume 1 (1987), 51-52. The new water gates were located at the Jade Fountain Hill, the Summer Palace, Sancha Kou (三岔口) at the Xizhi Men (西直门), Song Lin (松林) at the Desheng Men (德胜门), and the Xibian Men (西便门).

Haidian qu shuili zhi 海淀区水利志 [Haidian district water conservation annals] (1993), 71. The fact that the Municipal Health Agency played a leading role in this work indicated that the hydraulic infrastructure was primarily of sanitary importance to the city at the time, like that in 1905.

By 1954, the hillside residents in the main body of the Western Hills still relied upon the twenty natural springs for living and production. See Beijing shi linye kance dui 北京市林业勘测队, "Xi Shan zaolin lvhua zaolin diaocha sheji shu" 西山造林绿化造林调查设计说明书 [Survey and design scheme for reforesting the Western Hills], in *Beijing Xi Shan Senlin Peiyu Lilun yu Jishu Yanjiu—Beijing Xi Shan Shiyan Linchuang Keji Lunwen Ji* 北京西山森林培育理论与技术研究—北京西山试验林场科技论文集 [The theory and technique of forest cultivation at the Beijing Western Hills— the collection of the scientific theses concerning the Beijing Western Hills Experiment Forest Plantation ], eds. Gan Jing 甘敬 and Zhou Rongwu 周容伍 (Beijing: China Environmental Science Press, 2010), 5-23.

In the 1940s, the Japanese occupying forces drilled thirty-three wells around the old city, twenty at Dongzhi Men (东直门), seven at Anding Men (安定门), and six southwest of the old city. This investment were drilled because of the decreasing water flow in the Wenyu River and also the need of air defense. Thereafter the waterworks established in 1908 ceased to operate, and deep well water became the major source for the old city. See Shi, *Beijing Transforms*, 225. In the West Suburb New Town (西郊新街市), three artesian well of 30-40 meters deep were drilled to provide 2300 tons of daily water supply. See Beijing shi gongwu ju 北平市工务局, *Beijing shi dushi jihua sheji ziliao* 北平市都市计划设计资料 [A collection of documents for Beijing city planning]. Volume 1 (1947), 39-52.

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Beijing shuili shizhi bianji weiyuan hui 北京水利史志编辑委员会 *Beijing shuili zhi gao* 北京水利志稿 [Beijing water conservation annals draft], Volume 2, 43-48.

Ibid., Volume 1, 15-17. During the period from 1949 to 1985, Beijing experienced seven severe droughts in total: the first in 1960, the second in 1965, the third in 1972, the fourth in 1975, and the fifth to the seventh in 1980-1982.

See Mentou Gou qu shuili zhi 门头沟水利志 *Mentou Gou district water conservation Annals* (1994), 109-110, 146. Under the administration of Mentougou District, the
Junzhuang Town locates in the western portion of the main body of the Western Hills.

466 For example, in Haidian District, the area irrigated by well accounted for 51% of the total irrigation area (212600亩), many of which were paddy fields. Meanwhile, various governmental, military, educational, industrial, and residential units also proliferated around the Western Hills. See Haidian qu shuili zhi bianji weiyuan hui 海淀区水利志编辑委员会, Haidian qu shuili zhi 海淀区水利志 [Haidian district water conservancy annals] (1993), 23, 32-33, 93.

467 Beijing shi shuiwen dizhi gongcheng dizhi gongs i 北京市水文地质工程地质公司, Beijing quan zhi 北京泉志 [Beijing spring annals] (1983), 17-32

468 Beijing shuili shizhi bianji weiyuan hui, Beijing shuili zhi gao, Volume 1, 19-20.

469 Haidian qu shuili zhi bianji weiyuan hui, Haidian qu shuili zhi, 64. The situation was even worse on the lower slopes and the plain. For example, except sixteen mountain springs 100 meters above sea level, all natural springs in Haidian District had dried up by 1980.

470 Municipal government document, Guanyu Xiang Shan Biyun Si meikuang kaicai ji Xiang Shan diqu yongshui wenti de qingshi ji shi youguan bumen de pishi 关于香山碧云寺煤矿开采及香山地区用水问题的请示及市有关部门的批示, 1972, 098-002-00137, Beijing Municipal Archives. It should be noted that U.S. President Richard Nixon visited Beijing in 1972, marking in important step in normalizing relations between China and the Western world. Since then, more and more foreign visitors flocked into the Western Hills, making it important for the government to maintain the historic sites in that area.


473 For example, in the Junzhuang Town, many wells that were drilled in the 1960s and 1970s dried up in the early 1980s, forcing local people to drill even deeper to find new water. See Mentou Gou qu shuili zhi bianji weiyuan hui, Mentou Gou qu shuili zhi, 109-110, 146. A direct cause of this problem was coal mining, see Chen Yuling 陈毓龄, “Fazhan she ban gongye dadao gongtong zhifu” 发展社办工业达到共同致富 [Common prosperity through commune industry development], in Mentou Gou wenshi 门头沟文史 [Mentou Gou’s cultural and history], ed. Mentou Gou qu weiyuan hui wenshi ziliao yanjiu weiyuan hui 门头沟区委员会文史资料研究委员会, Volume 7 (1996), 125-128.
For the rainfall records of Beijing from 1724 to 1985, see Beijing shuili shizhi bianji weiyuan hui, *Beijing shuili zhi gao*, Volume 2, 59-69.

For a general introduction to the weather of Beijing, see *Beijing shuili zhi gao*, Volume 1, 14-15.

The wheat fields of the Sino-French University covered 30 acres (188 亩) of the ditch bed from Yaba Qiao (压壩桥) to Shuanghuai Shu (双槐树).

The work was originally assigned to the military troops (第五军第十四、十五师), who moved elsewhere after one week of construction. Later the municipal government had to hire local engineering companies to do the work. See Municipal government document, *Beiping tebie shi gongwu ju guanyu xiang Shan zizhi cun hanqing jixu kaiwa Nan Hanhe zihe, zunling heyi zai xueyuan guanyu shujun nan bei Hanhe yijian he chengbao xiuzhu Xiang Shan nan bei Hanhe gongcheng*.

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474 Beijing shuili shizhi bianji weiyuan hui 北京水利史志编辑委员会, *Beijing shuili zhi gao*, Volume 1, 19-23. In 1981, there had been a 1000-square-kilometer cone of depression below the ground of urban Beijing, the center of which was near Dongzhi Men. The water table at some points of this area had been more than 30 meters below ground.

475 For the rainfall records of Beijing from 1724 to 1985, see Beijing shuili shizhi bianji weiyuan hui, *Beijing shuili zhi gao*, Volume 2, 59-69.


477 Municipal government document, *Beiping tebie shi gongwu ju guanyu chakan nan bei Hanhe gongchengbing shengying fangxian xianzhao gongfei he qing jinshi jiguang paibing canjia de cheng ji shi zhengfu de xunling, zhiling* 北平特别市工务局关于查勘南北旱河工程并申请防险治标工费和请军事机关派兵参加的呈及市政府的训令、指令, J017-001-00503, Beijing Municipal Archives.

478 Municipal government document, *Nan bei Hanhe zhengzhi jihua* 南北旱河整治计划, 1930, J017-001-00434, Beijing Municipal Archives; Municipal government document, *Xiang Shan Biyun Si weichi hui qing tijian wajun Hanhe xialiu zhi Beiping shi gongwu ju de han* 香山碧云寺维持会请提前挖竣旱河下游致北平市工务局的函, 1934, J017-001-00790, Beijing Municipal Archives, The dredged upper South Ditch soon became clogged again because mountain torrents could not flow downstream. In April 1935 local peasants dredged the downstream portion between Wukongqiao and Xibianmen, but this time they were able to extend that work northward. See J017-001-00891.

480 Municipal government document, *Beiping tebie shi gongwu ju guanyu Xiang Shan zizhi cun hanqing jixu kaiwa Nan Hanhe zihe, zunling heyi zai xueyuan guanyu shujun nan bei Hanhe yijian he chengbao xiuzhu Xiang Shan nan bei Hanhe gongcheng*
yongkuan zhichu jisuan shu biao de cheng ji shi zhengfu de zhiling 北平特别市工务局
关于香山自治村函请继续开挖南旱河子河，遵令核议在学院关于疏浚南北旱河意见
和呈报修筑香山南北旱河工程用款支出计算书表的呈及市政府的指令，1930-1931，
J017-001-00435, Beijing Municipal Archives; Municipal government document,
Wang Deshan deng qingqiu zhijie chengzu Xibian Men, Qinglong Qiao, Yuantong Guan
dengchu mianchu Zhang Qi boxiu minzhong de cheng he Beijing shi gongwu ju de
pishi qing paiyuan huitong ben ju congxin zhangkan ping xi Hanhe, jiaona dizu,
baozheng jin shiye yu Biyun Si weichi hui de laiwang han he bugao deng 王德山等请求直接承租西便门、青龙桥、园通观等处免除张启剥削民众的呈和北平市工务局的批
及请派员会同本局从新丈勘平西旱河、交纳地租、保证金事宜与碧云寺维持会的来
往函和布告等, 1931, J017-001-00591, Beijing Municipal Archives.

481 Beijing tebie shi gongwu ju, "Yuquan yuanliu zhi zhuangkuang ji zhengli dagang
jihua shu." At that time, this lake had been largely turned into paddy fields, being
filled with silt.

482 Municipal government document, Beijing shi gongwu ju guanyu yang xia huaguai,
Yangshui liang hu huagui ben ju guanli (fu liang hu handi qingce) he jiejue
daoitian jujian, he jian dianhu Zhang Tongtang deng ying jiao zujin de cheng ji pi yiji
shi zhengfu de zhiling, xunling deng 北平市工务局关于将平西高水、养水两湖划归
本局管理 (附两湖旱地清册) 和解决稻田纠纷、核减佃户张同德堂等应缴租金的呈
及批以及市政府的指令、训令等, 1931-1934, J017-001-00737, Beijing Municipal
Archives. The middle and lower reaches of the Yangtze River experienced severe
flooding in 1932, which was caused by three factors: the rain was too heavy; the
Boyang Lake and Dongting Lake shrunk greatly because peasants filled the lakes for
farming; and the torrents from the Hua River rushed into the lower reach of the
Yangtze River and blocked the water of the latter from flowing downstream. As a
result, the KMT government issued a general order to abandon all farmlands that
impeded flood discharge and storage.

483 Municipal government document, Beijing shi gongwu ju he guanli Yihe Yuan
shiwu suo guanyu Jingming, Yihe liang yuan ge zhadow jiaojie qingxing he guanli
banfa de huicheng ji shi zhengfu de zhiling, xunling deng 北平市工务局和管理颐和园
事务所关于静明、颐和两园闸洞交接情形和管理办法的会呈及市政府的指令、训
令等, 1946-1947, J017-001-03105, Beijing Municipal Archives. During the same
period, even many water bodies within the Summer Palace and the Jade Fountain
Hill garden had also been subject to similar treatment. The municipal government
took over the two lakes in 1932, but it was never able to do dredging. After the
Japanese seized Beijing, the puppet municipal government returned the lakes back
to the Summer Palace Administration Agency in 1939, and the latter soon surveyed
and filled in the two lakes for farming. See also Municipal government document,
Zhang Xiaoxi guanyu diaocha Yihe, Jingming liang yuan fei tian huan hu qingxing de
baogao 张孝洗关于调查颐和、静明两园废田归湖情形的报告, 1947, J001-004-
00288, Beijing Municipal Archives. In 1947, there was (56亩3分) in the Jade
Fountain Hill garden, and in the Summer Palace, and the municipal government
made a plan in 1946 for abandoning the farmlands within the two imperial gardens, which was also never fulfilled due to the opposition of the peasants.

484 J017-001-00891.
485 Ibid.
487 J017-001-00891 and J017-001-02613. In August 1938, the thirteenth autonomous district wanted to dredge the section of the South Drought River between Pingpo Zhuang and Shuanghuai Shu, but the municipal public works bureau asked local peasants to do the job themselves because the municipal government lacked enough money. After the flooding of 1942, the municipal government only repaired the dyke near the Xiaotun Village.
489 The work of 1951 was in response to the storm floods of summer 1950, but it only dredged a channel (子河槽) within the silted lake due to lack of money. With the work of 1955 that the storage capacity of the lake reached 1200000m³. But the violent storm of 1963 still caused serious flooding, and thus next year the municipal government increased the storage capacity of Yuyuantan to 1600000m³. See *Yuquan Tan gongyuan guanli chu* 玉渊潭公园管理处, *Yuquan Tan gongyuan zhi* 玉渊潭公园志 [The Yuyuan Tan Park Annals] (Beijing: Academy Press 学苑出版社, 2000), 30-38.
490 Besides, the section from Beijing Botanic Garden to the Wanan Cemetery was filled up for farming in 1956, and in the same year the branch ditch from Baiyunguan to the western city moat was abandoned. See *Haidian qu shuili zhi bianji weiyuan hui*, *Haidian qu shuili zhi, 72-73.*
491 Beijing shuili shizhi bianji weiyuan hui, *Beijing shuili zhi gao*, Volume 1, 108. Besides the changes made to the Qing River, the North Ditch itself also experienced some changes. In 1972 local peasants used the original ditch to plant fruits and attempted to dig a new one further north. But the new ditch was never fully completed because there were too many government units and farmlands along the way, and thus in 1998 the original ditch in the south was restored. See *Haidian qu shuili zhi bianji weiyuan hui*, *Haidian qu shuili zhi*, 74. See also Sun Jingdu 孙京都, “2006 nian Xi Shan hongshui dui Beijing chengshi fanghong de qishi” 2006年西山洪水对北京城市防洪的启示 [The flood at the Western Hills in 2006 and its...
inspirations for urban Beijing’s flood control], *Beijing shuiwu* 北京水务 [Beijing water] 3 (2007): 14-16.

492 The Long’en Temple Reservoir, constructed in 1957, was originally designed to store 60000 m³ of storm-water from a catchment area of 3 square kilometers, but water would completely percolate into the ground within two months after rainstorm. The Lalahu Reservoir, constructed in 1975, was expected to control a catchment area of 3 square kilometers and store 3000 m³ of water. See Shijing Shan qu shuili zhi bianji weiyuan hui 石景山区水利志编辑委员会, *Shijing Shan qu shuili zhi* 石景山区水利志 [Shijing Shan district water conservancy annals] (1996), 57-58.

493 Ibid., 56-58, 85-87. The South Horse Ranch Reservoir is composed of an embankment (20m high), a spillway (6m wide, according to the heaviest storm in 20 years), and an outlet, with the maximum storage capacity of 200000 m³.

494 Ibid., 55-56.

495 Haidian qu shuili zhi bianji weiyuan hui, *Haidian qu shuili zhi*, 83-85.


497 Haidian qu shuili zhi bianji weiyuan hui, *Haidian qu shuili zhi*, 83-85. For example, from 1987 to 1989, the Zhoujia Xiang Gully (周家巷沟) was dredged, paved with stone, and equipped with hydraulic facilities like ladder and floodgate. Before the reservoir, there were no paddy fields in this area. But by 1984 (7000 亩) arid lands around the reservoir had been turned into paddy fields. Ibid.


500 An example of this is the Fragrant Hill Green Leisure and Sport Park (香山绿色休闲体育园) located east of the Western Hills National Forest Park. Originally approved by the municipal government in 2005 for storm-water retention, this project ended up with building a privileged golf course. Since 2007 it has been subject to media report and public criticism. See Xing Xuebo 邢学波, “Gao’erfu quichang maochong gongyuan xiujuan: weiyu Haidian qu Siji Qing zhen, guotu bumen cenging jiaoting” 高尔夫球场冒充公园修建: 位于海淀区四季青镇，国土部门曾经叫停 [Golf course is built under the title of public park: located at the Town of Siji Qing of the Haidian District, once being called off by the land departments], Jinghua shibao 京华时报 [Beijing Times], April 14, 2007, accessed August 31, 2014, http://epaper.jinghua.cn/html/2007-04/14/content_106313.htm.

501 Sun, “2006 nian Xi Shan hongshui dui Beijing chengshi fanghong de qishi.”
Passing through the Taihang Mountains and descending into the flatlands, the Yongding River was particularly turbulent and its large sediment load made it particularly dangerous. Before 1949 there were seven attempts to divert water from this river, all of which started the channels northwest of the Shijingshan Hill. They all failed because the flash floods of the river threatened urban Beijing and the river water resulted in canal clogging easily in the waterways downstream. For the six attempts before 1912, see Yin Junke 尹均科, *Lishi shang de Yongding He yu Beijing cheng* 历史上的永定河与北京城 [The Yongding River and the City of Beijing in History] (Beijing: Yanshan Publishing House, 2005). For the attempt during the republican period, see Beiping shi gongwu ju, *Beiping shi dushi jihua sheji ziliao*, Volume 1, 26.

The North China Water Conservancy Committee (华北水利委员会) made “Zhengli Yongding He Jihua Dagang” 整理永定河计划大纲 [The Scheme Outline for Managing the Yongding River] in 1924, “Shunzhi Hedao Zhiben Jihua Baogao Shu” 顺直河道治本计划报告书 [The Scheme for Permanently Managing the Waterways of North China] in 1925, and “Yongding He Zhiben Jihua” 永定河治本计划 [The Scheme for Permanently Managing the Yongding River] in 1933. The government then began to survey the reservoir site in 1935 and planned to complete the dam in December 1940, but the subsequent war ended the work. For a general introduction to these schemes, see Wu Wentao 吴文涛, *Beijing shuili shi* 北京水利史 [The History of Water Conservancy in Beijing] (Beijing: People’s Publishing House, 2013), 190-201. As for the Chaobai River, the North China Hydraulic Committee planned in 1929 to build a reservoir on the upper river, and the present-day Miyuan Reservoir was one of the four candidate locations.


Ibid., Volume 1, 176-182.

In the initial scheme, the section east of Moshikou 模式口 flowed through Xingshi Kou 杏石口 and the Gaoshuihu Lake to the Kunming Lake. But later the Soviet experts suggested that a modern city needed to be traversed by canals for the purposes of scenic beauty and recreation, just like that in Moscow. They also pointed that this course was shorter than the original one. In fact, both of these two courses had been compared in the scheme for Beijing’s water transportation that was proposed by the Municipal Public Works Agency in 1928. The merit of the alternative one was that the Gaoshui Lake could serve as the sedimentation basin to purify the muddy water from the Yongding River. See Beiping tebie shi gongwu ju 北平特别市工务局, “Beiping tonghang jihua zhi cao’an” 北平通航计划之草案 [The Navigation Scheme for Beijing], *Zhonghua gongcheng shi xuehui huibao* 中华工程师学会会报 [Journal of the Chinese Association of Engineers] 15/9-10 (1928).

Beijing shuili shizhi bianji weiuyuan hui, *Beijing shuili zhi gao*, Volume 4, 230-297. In the scheme of 1960, the channel was to flow from the Xicui Village (西崔村) directly to the Dongzhi Gate (东直门), and a siphoning pipeline would be used when
the channel crossed the Sha River. This course was much shorter and thus more economic. It was until 1965 that the scheme was modified to make a detour.

508 Ibid., Volume 4, 312. The heights of these drop structures are: 2.67 meters at Laodian (老店), 29.47 meters at the Moshikou Tunnel, 4.1 meters at Liuniangfu (娘府), 3.41 meters at Ruiwangfen, Liaogongzhuang, and Shuanghuaishu, 2.8 meters at Wukongqiao, and 6.5 meters at Yuyuantan.

509 Ibid., Volume 4, 230-297. Gongzhuangzi is 86 meters above sea level, and the Kunming Lake is just 49 meters above sea level. The elevation at the Xicui Village is 53.32 meters above sea level.

510 Ibid., Volume 4, 235, 242-243. These gully-crossing structures include thirty-six flumes, eleven culverts, and ten inverted siphons.

511 Ibid., Volume 4, 309-310.

512 Beijing tebie shi gongwu ju, “Beiping tonghang jihua zhi cao’an.”

513 Beijing shuili shizhi bianji wei yuan hui, Beijing shuili zhi gao, Volume 1, 189-198.

514 A new branch channel was dug in 1972 to connect the Bayi Lake and the East Lake because people of the time wanted to breed fish in the West Lake. See Yuyuan Tan gongyuan guanli chu, Yuyuan Tan gongyuan zhi, 30-38.


516 Ibid., 81-108.

517 Beijing shuili shizhi bianji wei yuan hui, Beijing shuili zhi gao, Volume 4, 257-260.

518 Ibid., Volume 4, 352-371. This was named as the East-to-West Water Diversion Project.


520 This channel is expected to be in service in 2014. The detailed information and latest news about the project can be accessed on the official website of the South-to-North Water Diversion Project: http://www.nsbd.gov.cn.
Municipal planning, cultural heritage management, forestry, and hydraulic engineering are the most important factors that have shaped the way the landscape of Beijing’s Western Hills was transformed from 1912 to 2012. These were powerful factors that defined the resource use pattern and overall physical appearance of that rugged terrain in relation to its surrounding region, setting up the institutional and technological framework within which the development of new individual properties in the vicinity has been regulated. As such development projects are commissioned now and in the future, landscape architects and architects will have to take into consideration related disciplinary concerns so as to provide creative solutions acceptable to all sides. Meanwhile, they also have to reconcile diverse demands of clients and local residents. Thus the modern design at the Western Hills is truly at the intersections of concerns and interests pertaining to a heritage landscape, with complexities and contradictions that this chapter examines.

The chapter focuses on two individual properties constructed after 1912: the Fragrant Hill Hotel and Beijing Botanical Garden (Figure 7. 1). They are chosen as case studies first because of their locations. Both are situated in the area of the Western Hills nearest to downtown Beijing (32 kilometers away) and have been historically part of the urban growth and development. This area features many famous historic monuments under cultural heritage protection at national or municipal levels, which pose challenges to any new development. The Fragrant Hill Hotel stands right in the middle of the former Imperial Hunting Ground (renamed as the Fragrant Hill Park after 1949), while the
Beijing Botanical Garden encompasses the Temple of the Reclining Buddha and a number of imperial and republican sites. The two projects together are good case studies for examining relationships between new and the old—particularly between heritage management and modern urban development—that are important for examining how modern design has emerged in the heritage landscape of Beijing’s Western Hills.

The two properties are also selected because both consist of a mix of natural and constructed elements. The Fragrant Hill Hotel is a low-rise complex in which guestrooms and twelve courtyard gardens merge inseparably, and the Beijing Botanical Garden

Figure 7.1 The Fragrant Hill Hotel and Beijing Botanical Garden in relation to downtown Beijing (by author)
cultivates thousands of plant species in the glasshouses and seventeen open-air exhibition gardens dotted by the halls, pavilions, patios, and sculptures. Despite their different scales, both feature picturesque ponds, streams, and waterfalls that are part of the larger hydraulic system of the Western Hills. Such complexity of composition, revealing the combined work of nature and humankind, is not seen in most other properties that emerged at the Western Hills during the same period, such as private villas, sanatoriums, college campuses, industrial plants, cemeteries, commercial and residential developments.

Moreover, the documentary materials related to the Fragrant Hill Hotel and Beijing Botanical Garden are abundant and accessible up till 2013. Information on the two properties comes from three sources: references to individual sites found in park chronicles and annals as well as government documents; the physical sites that I visited in summer 2013; and a body of journal articles wrote by the designers themselves or other critics after the completion of the projects. With these, I am able to trace the processes of land development. In comparison, few other properties have been so well documented. For example, there were once a large number of private villas dotting the hillsides near the Temple of the Azure Clouds and the Dragon Appearing Hill, but most of them have fallen into oblivion and the surviving ones lack records concerning their design and construction. Similarly, there is little information on the three cremation cemeteries at the foot of the Western Hills.

Finally, the Fragrant Hill Hotel and the Beijing Botanical Garden have been directly associated with China’s modernization schemes. Modeled on the Moscow Botanical Garden of Academy of Sciences (founded in April 1945), the Beijing Botanical Garden was proposed in the early 1950s as an indispensable part of Beijing as the capital
city of a new socialist country. It was expected to promote scientific research and public education in modern China. On the other hand, the hotel was the first design project done by Western designers in China since its Reform and Opening Up, symbolically marking the beginning of China’s contemporary globalization. Therefore, the two projects together provide some important clues to the larger trajectory of Chinese modernization as well as global changes.

The Fragrant Hill Hotel

Completed in 1982, the Fragrant Hill Hotel is a four-star hillside hotel located in the eastern part of the Fragrant Hill Park (the former Imperial Hunting Ground), occupying about 30000 square meters of sloping land at the eastern foot of the Western Hills (Figure 7. 2). This site was where a palace (中宮) of the Qing emperor, enclosed by the wall and dotted with building complexes as well as a water maze (曲水流觞), once stood before the conflagration of 1860. The present-day hotel was mainly designed by the Chinese-born American architect I. M. Pei (贝聿铭) in 1979 and awarded the 1984 National Honor Prize of the American Architects Institute. The hotel has 325 guest rooms, a 750-square-meter atrium, ballrooms, conference rooms, restaurants, services, retail, athletic club and pools, a 2800-square-meter outdoor terrace, and 11,000 square-meters of landscaped gardens with a reconstructed water maze. The gardens were co-designed by the Chinese landscape architects Liu Shaozong (刘少宗) and Tan Xin (檀欣) from the Beijing Municipal Park Service.
The design of the Fragrant Hill Hotel coincided with a critical moment in China’s modern history when the country turned away from class struggle and focused instead on economic development through globalization. As the first building in socialist China ever designed by a designer from the West, albeit an overseas Chinese, this hotel was a
political symbol of the new reform and opening up policy. Following President Nixon’s 1972 visit, Pei returned to China with a delegation of the American Institute of Architects in 1974, his first visit since leaving China in 1935. He went again in 1978 at the invitation of the Chinese government who wanted Pei to design high-rise deluxe hotels along the Chang’an Street (长安街, south of the Forbidden City) for accommodating foreign visitors. Pei was then already famous for his design of the John F. Kennedy Library in Boston and the East Building of the National Gallery in Washington, DC, and his identity as an overseas Chinese made him more acceptable to mainland Chinese who cared about their national dignity. However, the architect was reluctant to make an intervention in the old city, and instead preferred a site outside the old city. Of the three outlying places that the government offered instead, Pei finally decided a piece of land within the former Imperial Hunting Ground.525

It is paradoxical that a man who was sensitive to the preservation of the old city would then consider it appropriate to develop a former imperial garden. Pei explained in 1980 that the Forbidden City had to be preserved together with the old courtyards of the old city, because a single historic monument should not be separated from its surroundings.526 This attention to the protection of areas surrounding historic sites accorded with the Western conception of historic preservation that dated back to at least the Athens Charter of 1931.527 Nonetheless, for the Imperial Hunting Ground, Pei merely mentioned the “natural beauty” that could set off his new building.528 It seems that the perspective of the architect was that the imperial garden was no longer a work of inviolable cultural heritage since it had lost most of its original buildings in the 1860
conflagration. No record shows that this single-minded focus on architecture was questioned and debated when the project was initiated in 1979.

Whereas the Chinese government expected the Fragrant Hill Hotel to be part of China’s economic and technological modernization, Pei regarded the same project as an experiment in critical regionalism. The experiment began in his 1946 graduate thesis from Harvard, for which he designed a museum for Chinese art, which featured a variation of bare wall and small garden patio that Pei found as two eternal features of Chinese living. Pei wished to find a formal language that was both progressively modernist and culturally sensitive, avoiding imitating the motifs of former periods superficially but at the same time holding on to the traditional features that were still alive.\(^{529}\) Having in mind this project all along, Pei made it clear to the Chinese audiences around 1980 that designing the Fragrant Hill Hotel was not merely for a single building, but rather to find a national architectural expression that could be applicable to all kinds of buildings in contemporary China.\(^ {530}\) As had occurred three decades ago, when he was interested in vernacular motifs like bare walls and garden patios, he still believed that such expression should derive from Chinese vernacular architecture, rather than imperial architecture, because much of it was still alive and could be more easily adapted for the present life.\(^{531}\) More specifically, to intermingle indoor and outdoor spaces, as in Chinese gardens, would lead to new conceptions.\(^ {532}\)

The original site already had a preexisting set of physical and social conditions. Located on a hillside, the parcel of land was topographically uneven: the west side was 10-12 meters higher than the east side and the south side 1.3 meters higher than the north side, with a mesa of two meters high in the southwest and an earth mound of one meter
high in the southeast (Figure 7. 3). The site’s soil foundation was problematic because its eastern part was made of the artificial fill of the republican years, and its southwestern part was full of old graves.

Figure 7. 3 The condition of the site of the Fragrant Hill Hotel before design (by author, redrawn based on Liu Shaozong and Tan Xin, “Garden design of Xiangshan Hotel.”)
Outside the site, an east-to-west mountain gully passed through the north of the site to cut it off from the main hiking trail further north, and other storm runoff from the western slopes also posed threat to the safety of the future hotel (Figure 7.4). Above the ground were many man-made additions, including a cluster of decrepit buildings that dated after 1860 and stood mostly in the northern side where the ground was relatively flat, an old retaining wall made of irregular local stones (虎皮墙) enclosing the site, and a water maze relic in the center south that dated before 1860. Between these structures were 470 trees, of which eighty-five were more than one hundred years old, including two ginkgo trees and dozens of pine and cypresses trees. To design such a site, the preservation, modification, or removal of these existing features was as important as the addition of the new.

Figure 7.4 The mountain gully north of the Fragrant Hill Hotel (Photo by author, August 25, 2013)
Besides the physical complexity, the original site also had administrative problems. It had been the focal point for the contention between the old Fragrant Hill Hotel and the Fragrant Hill Park (the former Imperial Hunting Ground). Founded in 1956, the old Fragrant Hill Hotel used various existing buildings and facilities left by the Fragrant Hill Charitable Home for Young, and the former Sweet Drew Hotel (甘露饭店) co-operated with the new Beijing Municipal Park Service (北京市第一服务局) to run the hotel and share the profit. However, the hotel was entirely transferred to the Beijing Municipal First Service Bureau and moved to the present site in 1962, becoming an enclave that was administratively separate from the rest of the park. This aroused resentment among the park staff. Eventually in 1976, the park administration requested that the hotel be forbidden from expansion and its staff housing be relocated because the park and the hotel differed in their functions: the former served the general public, while the latter was for specialist conferences and high-end visitors. It also criticized the hotel for impeding scenic views, interrupting tourists with motor traffic and parking lots, and polluting the surroundings with all kinds of waste. A compromise was reached in 1978: the existing buildings (of little value) would be torn down, while the existing trees would be protected. The new hotel would be confined within the existing boundary, its height and form in harmony with the setting, its traffic lane separated from the park trails and its parking lot located outside the park.

The Fragrant Hill Hotel we see today had been designed under the above physical and social constraints, which are reflected in the layout of the new building complex in relation to its original site and the park (Figure 7.5). Pei divided the complex into five functional areas: 1) Area III, a large atrium, comprised of a lobby, a shop, a cafe and the
front desk; 2) Area I had five long-span rooms for dining and conference, the kitchens and other service facilities; and 3) the 325 guest rooms were all located in Areas II, VI and V, and a swimming pool and gym could be found in Area II. Interconnected by corridors, these guest rooms zigzagged out from the atrium and the dining rooms to form eight enclosed open spaces between the building complex and the old stonewall.

Comparison of this layout with the plan of the original site reveals that the new buildings and pavement were mostly located on the foundations of the old ones (which were removed). In this way, Pei preserved as many of the existing trees as possible, as required by the client. Also in response to the client’s requirement concerning traffic, he placed the parking lot beyond the hotel; the open space north of the building was used for cars to turn around and linked to the parking lots outside the park by a short-cut lane fenced from the nearby park trail (Figure 7.6).

The complex’s convoluted zigzag layout was not merely a compromise between preservation and development, but also created an indoor/outdoor relationship as seen in traditional Chinese gardens. With the existing retaining wall preserved, Pei created eight enclosed open spaces between the building complex and the site boundary, which, except for the northern one as the entrance plaza, were to be gardens that could be viewed from inside the building or entered into directly. As a result, eighty percent of the corridors leading from the atrium to the guest rooms were bordered by outdoor gardens on at least one side, and almost every indoor public space and guest room had at least one side facing a garden. In this way, Pei hoped future guests could enjoy an intimate reciprocal relationship between nature and man similar to that of traditional Chinese gardens.
Figure 7.5 The building part of the Fragrant Hill Hotel in relation to the original site (Plan by author, the building roof and old trees drawn based on Wang Tianxi, "The Design of Xiangshan Hotel.")
Based on this overall site layout, the architects and the landscape architects began the detailed design. For the building complex, Pei experimented with a variety of symbolic variations of vernacular Chinese architecture motifs. For example, all the surfaces of the eleven-meter high atrium, both inside and outside, are painted with white
stucco, and gray clay tiles are threaded across these surfaces to form windows or non-functional decorations in the shapes of circle and square (Figure 7. 7). The traditional material and craftsmanship from vernacular architecture in the lower Yangtze River are thus combined with abstract geometrical shapes to become a new formal expression. While the atrium is mostly flat-roofed, there is a glass roof above the central lobby through which the sun spills into the indoor space, and the exposed metal framing installed beneath the glass roof diffuses the light. The shape of the glass roof is similar to the simplified version of a traditional Chinese curved roof, and the layout of the atrium resembles a traditional Chinese courtyard (Figure 7. 8).

Figure 7. 7 The northern façade of the atrium of the Fragrant Hill Hotel (Photo by author, August 25, 2013)
These design approaches in the atrium are actually adopted throughout the hotel building, including the entrance archway that features a horizontal slab overhanging the two vertical ones, which looks like the front façade of a traditional Chinese building (Figure 7. 9). Overall, through the symbolic simplification of traditional architectural forms and the repetition of material and shape, Pei created a building complex that is both unified and varied, both old and new.
The garden’s design follows that of the building complex. The primary problem was how to deal with the relationship of the main garden (7000 square meters) to the building. Pei’s sketch plan placed a large artificial pond in the main garden, as in classical Chinese gardens. To emphasize the main axis extending from the atrium, Pei designed the northern bank of the pond symmetrically and cut the pond in half through a north-to-south bridge. This plan was later revised in consultation with the landscape architects Liu Shaozong and Tan Xin who thought the axis could be better stressed by the restored water maze, and the pond should be divided into several parts of varied sizes for contrast. Thus in the final plan, the water maze became the focal point of the main garden, and two stone bridges and a string of stepping stones divided the pond into four parts, with the water source coming from an artificial rockery installed nine meters above on
the natural slope in the southwest (Figure 7. 10). Together, the atrium, the water maze and the rockery formed an axis that led the view to the mountain scenery south of the hotel (Figure 7. 11; Figure 7. 12).

Figure 7. 10 The gardens in the Fragrant Hill Hotel (by author, based on Liu Shaozong and Tan Xin, "Garden design of Xiangshan Hotel.")
Figure 7.11 The water maze (front) and the atrium (back) on the central axis (Photo by author, August 25, 2013)

Figure 7.12 The main garden, looking south from the atrium (Photo by author, August 25, 2013)
Between the pond and the two wings of the guest rooms as well as the southern outer wall were the earth mounds with rockeries and plants based on the existing topography, with which the landscape architects expected to provide privacy to the guest rooms. On top of the earth mounds were also a few outlooks that offered views of the Western Hills (Figure 7.13). The overall spatial structure of the hotel is formed through the constructed views so that building, gardens and setting are visually connected.

Sixteen individual views were thus created across the outdoor spaces of the entire property, each view having distinctive features. Some of them, such as the reconstructed water maze, made historic references. Some featured rockeries from around China, as for example, the rockeries from Yunnan (a southwestern province) that were installed in
View 6 and View 14 (Figure 7.14), and that from southwest Beijing became the focal point of View 1. While ornamental plants complemented most of the views characterized by hardscape materials, other views featured common plants that were associated with vernacular courtyards of North China. A good example of this was View 4, in which the pink white flowers of the almonds contrasted with the dark green leaves of the pines and bamboos.\textsuperscript{543} In addition, rockeries and ornamental plants also border the pond and roads as in classical Chinese gardens, and the pavement design of the pavement directly emulated the traditional patterns (Figure 7.15).

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{rockeries_from_yunan.jpg}
\caption{The rockeries from Yunnan (Photo by author, August 25, 2013)}
\end{figure}
After the detailed design plan was in place, the construction work began. There remained many other problems to be solved in order to make the design envisioned by the architects and landscape architects a physical reality. First of all, two concrete-structure bridges, one for guests and the other for the hotel staff, were built over the mountain gully outside the hotel entrance. Considering that the structures were located in a scenic area, the engineers covered the bridge floor and handrails with granite, decorated the ground below the arch with block stones, and installed thirty-two stone lamps along the sides of the bridges as well as the hotel’s traffic lane (Figure 7. 16). They also used that existing gully to drain rainwater runoffs from the building roofs and in the gardens, and dug ditches and piled obstacles west of the property to lead the outside runoffs from
the western slopes into the northern gully.\textsuperscript{545} Besides the rainfall-related problems, the artificial fill on the down-slope side of the original site was unstable and was eventually handled by inserting a reinforced concrete structure into it.\textsuperscript{546} 

Also in response to the fill’s instability, the pond was lined with an EPDM waterproof layer for preventing ground seepage. Moreover, to prevent the pond from freezing in winter, a water circulation system was installed in the northwestern part of the pond where the elevation was a little higher and the water flowed through the stepping-stones to the rest of the pond (Figure 7. 17).\textsuperscript{547} Nonetheless, the hotel ultimately relied on a well below the hill as its water source, the water of which was first pumped to a water
tank nearby the hotel and then transferred to its pond.\textsuperscript{548} Finally, because the urban infrastructures of Beijing had not yet been extended to the upper Western Hills, new lines of electricity, sewage and telephone were built over long distance between the hotel and the city, and the relevant country roads were widened to facilitate construction and transportation.\textsuperscript{549} Generally speaking, the construction had been troublesome and costly due to the various constraints of the original site.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{image.png}
\caption{The northwestern part of the pond in the main garden, separated by a string of stepping stones and installed with a water circulation system (Photo by author, August 25, 2013)}
\end{figure}

Despite these problems, the Fragrant Hill Hotel was eventually completed in October 1982 after forty-five months of site planning, design and construction. As the first design project by a Western-trained designer in socialist China, it has received much
attention since then, but mostly in negative ways. Some criticize from the perspective of cultural heritage, claiming that the hotel harms the integrity of the former Imperial Hunting Ground as a cultural heritage and makes its future restoration difficult. The park staff complained that the development removed 245 existing trees in total, of which 70 were older than one hundred years. Moreover, the new hotel appears too large and white in comparison to its surrounding valley, and its design is mainly inspired by traditional vernacular architecture in the lower Yangtze River and thus incompatible with the former imperial garden in North China.

In addition to the problems with respect to historic preservation, the hotel is regarded as socially and economically problematic. On the one hand, it contradicts the idea of the Imperial Hunting Ground as a modern public park because ordinary visitors are denied access. Occupying so large an area in the middle of the Fragrant Hill Park, the hotel further hampers the public’s benefit and enjoyment of the park. Meanwhile, the hotel operation and the park management are separated. In fact, during the first two years after the new development, the municipal park service continued to try to take back the old buildings occupied by the hotel staff, acquire the ownership of the new hotel and forbid any further hotel expansion. On the other hand, the Fragrant Hill Hotel is decried as a money-sink due to that fact that its site and surrounding required the building of so much urban infrastructure.

The Fragrant Hill Hotel is also flawed with respect to water resource management. Its 1400-square-meter pond undoubtedly enhances the aesthetic quality of the property, but it is unsuitable for a hillside site that originally had no natural source of water. In fact, the municipal water supply has not yet been extended to the Fragrant Hill.
Park, and the natural springs within the park have mostly dried up. To compensate, the park staff has to rely on four deep wells, the water from which is transferred to fifteen retention basins all over the park to support daily living, plant irrigation and fire control. Under this condition, the creation of large-scale water scenes for the hotel is unsustainable since it increases water losses through evaporation and seepage, aggravating the existing water scarcity of the site.

Consequently, it is no surprise that the Fragrant Hill Hotel has been so unanimously condemned. While many are inspired by its design methods, especially visual unity and variation, indoor/outdoor relationship and skylight borrowing, they insist that the hotel should not have been located within the former Imperial Hunting Ground. Pei later admitted that he was wrong in his experiment within that property, and that it would have been better to preserve the garden ruin without any modification. In this sense, the Fragrant Hill Hotel is a negative lesson with respect to the modern development of Chinese heritage landscape. Its failure testifies that the preservation of historic gardens is as sensitive an issue as, if not more than, that of architecture-dominated settings.

The Beijing Botanical Garden

Co-founded by the Beijing Municipal Park Service and the China Academy of Sciences in 1956, the Beijing Botanical Garden is situated in a valley of the Western Hills between the former Imperial Hunting Ground and the Jade Fountain Hill (see fig. 1). A number of historical sites that preexist within this valley area are preserved as tourist spots, including the Temple of the Reclining Buddha (卧佛寺), the Caoxueqin’s
Memorial (曹雪芹纪念馆), the relic of the Longjiao Temple (隆教寺), and some republican celebrities’ residences and tombs like Liang Qichao’s (梁启超) Tomb. After about six decades of intermittent development, the Beijing Botanical Garden is now cultivating its plants in three main sections: the Ornamental Plant Section comprises of thirteen theme gardens like Rose Garden and Peach Garden; the Arboretum is composed of six theme gardens like Coniferous Garden and Acer-and-Rosa Garden; and the Glasshouses include the tropical and subtropical conservatories as well as the Bonsai Garden. Besides plant exhibition, the Cherry Tree Valley northwest of these sections is designated as a Nature Reserve Area for experiments on ecological restoration. A string of six artificial lakes run southeast from the Cherry Tree Valley through the entire valley bottom to the southeastern tip of the botanical garden, forming the scenic centerpiece.

The idea of building a comprehensive botanical garden in Beijing was first proposed in 1950 by the China Academy of Sciences. The academy pointed out that every modern metropolis around the world had its own botanical gardens, whereas a country boasting more than 2000 plant species like China had yet no single such comprehensive establishment. The Beijing Botanical Garden was to fulfill five goals: 1) to improve agriculture, forestry, and horticulture; 2) to find plant species suitable for urban greenification and hilly land reforestation; 3) to educate the general public; 4) to inspire people’s patriotism; and 5) to encourage foreign visitors to admire China by exposing them to Chinese indigenous plants. Moreover, it was envisioned as the headquarters for a network of botanical gardens all over China. For this reason, the academy restored two republican botanic gardens destroyed in wars and established another fourteen new ones in the six-year period from 1953 to 1958. Therefore, the
Beijing Botanical Garden was part of a larger scheme to build a modern China, inextricably linked with Chinese nationalist ideology that prevailed in the twentieth century.

However, it was not easy to find an ideal site for such a comprehensive botanical garden. The academy thought that the garden should occupy 1.2 to 1.5 square miles of land where there was varied topography, abundant water, and convenient transportation. The western half of the present-day Beijing Zoo, 82 acres in total, was initially chosen in 1950, but it was too small. Then the academy looked to locate the garden in the Old Summer Palace instead, but some communist leaders who wished to save the ruin for future reconstruction denied the request. Three other sites proposed as alternative options were also problematic: the Jade Fountain Hill and the Fragrant Hill were ideal but not allowed, and the Gold Hill (金山) was too remote and lacked infrastructure. A compromise reached in 1954 located the Beijing Botanical Garden in the vicinity of the Temple of the Reclining Buddha (卧佛寺), for which the State Council approved to allocate 1280 acres (8000 亩) of land and 5.6 million Chinese Yuan for the infrastructural construction. But ultimately the Beijing Botanical Garden was only able to acquire 640 acres (6000 亩) of land from the local rural community (香山大队) in 1959.

This final site encompassed a drainage basin of the Western Hills with a length of 4 km and a maximum width of 2 km, which is enclosed by the topographical ridges 500 meters higher than the valley mouth except for its south side (Figure 7. 18). The basin has three fifths of its total area hilly and only one fifth flat, between which are slopes with steep inclines that range from 15 to 30 degrees. The rugged terrain consists of
sedimentary sandy shale topped by cinnamon soil, while the flatland is formed by mountain stream deposit sediment. The hilly part of the basin is covered with the forest planted in the mid-1950s that is comprised predominantly of pines, cypresses, and locust and maple trees.

Figure 7.18 The original site of the Beijing Botanical Garden as of 1954 (by author, based on the map "Wofosi Shanxing Tu” 卧佛寺山形图 [The topography of the Temple of the Reclining Buddha], included in a government document that can be found at the Beijing Municipal Archives, code: 098-001-00190).
Through the drainage basin meanders a spring stream that emerges from the sandstone 195 meters above sea level, which runs all year round and is directly recharged by rainwater. Although perennial, the spring has a limited yield that varies in correspondence to the precipitation of Beijing, and its stream could not reach beyond the mouth of the valley in 1958 (Figure 7.19). This water channel is also where surface water from rain converges to the basin exit where the waters join another stream from the adjacent drainage basin to the west and then flow into the North Drought River. As a result, an accumulation of sandy and stony alluvium unsuitable for planting was deposited in the southern part of the site.

![Cherry Valley Spring](image)

**Figure 7.19** The changing yield of the Cherry Valley Spring during the period of 1957-1977 (Source: The annals of Beijing’s springs, 21)
As far as its natural conditions are concerned, the site for the Beijing Botanical Garden is a mixed blessing. With the varied topography and slope orientation, the valley experiences very different moisture and temperature regimes in different parts, which provide ideal conditions for cultivating various plant species. The narrow upper valley, called the Cherry Tree Valley (樱桃沟), was particularly suitable for this purpose due to its cool and wet microclimate. However, on the other hand, this site did not meet the academy’s requirement for sufficient water supply because it had only one year-round spring with limited yield, while the rainfall was sporadic. It was not suitable for irrigating large numbers of plants and it didn’t provide enough water for the water bodies necessary for exhibiting aquatic plants and for delighting visitors. This is perhaps why the academy preferred the other more water-rich sites, such as the Jade Fountain Hill, at the very start.

Besides the natural constraints, the historic and social layers added more complexities to the drainage basin. Before the new development, this site was dotted with six Buddhist temples or their ruins that dated back to the pre-1912 era, the grandest and best preserved of which was the Temple of the Reclining Buddha that was included on the Beijing Cultural Heritage List in 1957. The ballast rock road extending from the city through the Summer Palace and the Jade Fountain Hill to the former Imperial Hunting Ground passed through the exit of the drainage basin, with one branch directly reaching the Temple of the Reclining Buddha. Also from the pre-1912 era were two blockhouses and the aqueduct linking the spring source and the Jade Fountain Hill, both of which were built under the reign of the Emperor Qianlong in the eighteenth century. Near the Reclining Buddha and along the upper spring stream were the villas and tombs of a few republican celebrities, such as Luyanjingshe (鹿岩精舍) and the Tomb of Liang Qichao (鹿岩精舍和梁启超墓)
In addition, there were four villages and a sanatorium within the planned area, which had not been relocated immediately along with the land allocation.

The existence of these man-made structures prior to the Beijing Botanical Garden meant that the new development would inevitably involve negotiations and conflict management. First of all, it was important to take care of the various historic remnants within the site and endow them with functions compatible with the collection, cultivation and display of a wide range of plants. Equally important was how to relocate the previous inhabitants and stop the nearby peasants from farming the land. These issues were complicated by disputes over compensation and new housing. Lastly, the 326-hectare man-made forest on the hilly area had been under the administration of the Western Hills Forest Plantation prior to the botanical garden, and it was uncertain whether the plantation would be willing to transfer its resources.

Under the above natural and cultural conditions, the new development began in 1957. The initial planning followed that of the Moscow Botanical Garden, focusing on research, education and some practical problems of the time like economic production. Accordingly, the Beijing Botanical Garden was dedicated to the popularization of plant science among the general public, being complemented by another smaller research-oriented botanical garden south of the Xiangyi Road (香颐路) run by the Chinese Academy of Science alone. Except for the Cherry Valley as the plant introduction section, the development was concentrated in the sloping and flat area between the Temple of the Reclining Buddha and the Xiangyi Road, in which the glasshouses and flower section were in the middle, the arboretum in the east, the fruit tree section in the west, the specialist garden section in the north, and the economic plant section in the
south. The botanical garden would also have six additional sections, such as the aquatic plant section and the garden art section. The low-water-consuming arboretum in naturalistic style and the fruit tree section would be the focus of plant exhibition due to the water shortage of the site, and the hilly area more than 200 meters above sea level was temporarily closed for forestry. The overall structure of the botanical garden was to be completed within seven years, and top priority was given to reservoirs, roads, conservatories and greenification.

Unfortunately, the implementation of this planning was not smooth in the first two decades (1957-1976). First, it was hampered by the economic collapse in 1959-1961, which resulted in the freezing of financial allocations and suspension of construction. Worse still, this economic hardship aroused so much resentment among the local peasants whose farmlands were acquired by the botanical garden, that the government was eventually forced to allow those peasants to use eight hectares of land, nine thousand fruit trees and twenty hectares of Chinese Mahogany (Toona sinensis). In the subsequent Cultural Revolution, the botanical garden was further encroached, its work team dissolved, and a great number of its plant species lost. The founders of the botanical garden also had to fight against those who occupied the historic properties within the garden, especially the Chinese Academy of Agricultural Sciences who used the temple Guanghui’an (广慧庵) and its northern area for bee keeping. Meanwhile the relocation of the previous inhabitants and the transfer of the 326-ha (4900亩) hillside forest remained unsolved.

Despite these frustrations, the founders of the Beijing Botanical Garden did manage to make some progress during this period, especially in infrastructure
construction. On the one hand, the hydraulic system of the site was improved. Five deep wells were drilled in 1957-1958 to relieve the water shortage of the site. A dam was constructed at the Cherry Valley 150 meters north of the Temple of the Reclining Buddha in 1972, and behind it a reservoir with a capacity of 150 cubic meters formed to store the water from the only spring source and detain mountain runoff from rain. The stream channel between the Temple of the Reclining Buddha and the Xiangyi Road was paved with stone to reduce erosion, and its sandy and stony alluvial fan was turned into gently rolling slopes and filled with loamy soil. On the other hand, the founders also built the west ring road and the outer west ring road, repairing the trail in the Cherry Valley. Although incomplete and unsystematic, these hydraulic and transportation facilities made the original site more plant-friendly and accessible.

The construction of three individual sections—the Magnolia Garden, the Lilac Garden and the Coniferous Garden—was initiated in the late 1950s along with the infrastructural development. The fact that the three were among those planned sections of the botanical garden closest to the Temple of the Reclining Buddha indicates that the founders should have considered the integration of cultural tourism and plant display. However, such integration is problematic as far as formal style is concerned, as seen in the Magnolia Garden (Figure 7.20). Situated on a 0.84-ha terrace that is bordered by retaining walls cut into the slope (the northern wall is 5 meters high), this garden features a cross-axial plan with a pool at the crossing point that is surrounded by two parterres in the north and south, each ornamented with four spruces in the corner. Entering the terrace through an opening in the low red wall bordering the road leading to the Temple of the Reclining Buddha and then a set of stairs, visitors can see the east-to-west axis articulated
by the pool, parterres and boxwood hedges. Behind the hedges are the lawns dotted with fourteen species from the Magnolia genus as well as a few pine trees and shrubs. This garden is so similar to an Italian Renaissance garden that it contrasts sharply with the adjacent courtyards of the Temple of the Reclining Buddha. Apparently the designers of the time did not yet care much about the stylistic consistency between the old and the new in this historic landscape area.

Figure 7. 20 The central pool of the Magnolia garden in the Beijing Botanical Garden, looking west along the central axis (Photo by author, 20 February 2008)

After the Cultural Revolution, the municipal park service and the Chinese Academy of Sciences began to revise the initial plan for the Beijing Botanical Garden since 1976 and eventually drew up a new one in 1982 (supplemented in 1989). The new plan kept the previous glasshouses and flower section, the specialist garden section, the
arboretum and the fruit tree section as the main components of the botanical garden, but deleted the economic plant section overlapping with that in the Chinese Academy of Science’s botanical garden and turned the Cherry Valley into a nature protection experiment section. These sections were subdivided into a number of smaller gardens, among which the bonsai garden, the rose garden, the rock garden, the herb garden, and the plant evolution garden were not present in the previous plan (Figure 7. 21).

Figure 7. 21 Beijing Botanic Garden before the water system reconstruction of 2003 (by author)
The new plan requires that plant display near historic properties and the main entrances be of high aesthetic quality, and that service facilities, such as tea houses and restrooms, be installed throughout the botanical garden. It also specifies that a deep well and two reservoirs be built to meet the future water demand, that two sewage pipelines be installed from the Temple of the Reclining Buddha to the Xiangyi Road, and that a road system be completed.\textsuperscript{587}

Under the new plan for the Beijing Botanical Garden, the development accelerated from 1980 onward, and by 2012 twenty specialist gardens had been completed, together with the bonsai garden (Figure 7. 22) and the main conservatory (Figure 7. 23).\textsuperscript{588} Most of the specialist gardens display plants in naturalistic settings that feature gently rolling lawns and serpentine paths (Figure 7. 24). These verdant blankets are endowed with pavilions, sculptures, rockeries, fountains and historic remains that serve as rest areas, centers of view, outlooks, or places of interest. Rockeries are also widely used to border lawns, waterfronts, pavements and retaining walls.\textsuperscript{589} In addition to these naturalistic gardens with a mix of characteristics from English landscape gardens and traditional Chinese gardens, there are also a few formal and symmetrical gardens, such as the rose garden with circular terraced flowerbeds, water drops and fountains (Figure 7. 25). Apparently no regulation for stylistic uniformity and consistency existed in the development of the Beijing Botanical Garden.
Figure 7.22 The bonsai garden (Photo by author, 26 August 2013)

Figure 7.23 The main conservatory (Photo by author, 26 August 2013)
Figure 7.24 A winding path in the Acer-Rosa section of the arboretum (Photo by author, 26 August 2013)

Figure 7.25 The rose garden (Photo by author, 18 August 2005)
The cultural resource management went hand in hand with the display of plants. Except for its central part with the Buddha statues, the east and west wings of the Temple of the Reclining Buddha have been managed as a high-end hotel since 1981. The botanical garden staff also took over the extant tombs and residences (dating back to the republican period), landscaped them, and added necessary service facilities to attract tourists (Figure 7.26). Whenever a relic of both the imperial and republican era was found, they turned it into a larger themed area. A good example of this is the Yellow-leaf Village in commemoration of the writer Cao Xueqin (曹雪芹, 1715-1763), which is situated on the site of the previous Zhengbaiqi Village. After an inscription of Cao was found there in the 1970s, the site was re-designed around the theme of Cao’s elderly life in the Western Hills, featuring a memorial, Japanese pagoda trees, an old well, blockhouses, and a section of an aqueduct (Figure 7.27). Likewise, the December 9th Memorial was constructed around a stone inscription carved by Chinese students expressing opposition to Japan in 1935 (Figure 7.28). Moreover, the ruined site of the Longjiao Temple was turned into a new garden, with only two original stone tablets standing in the entrance (Figure 7.29). Despite the differences in theme and function, all these sites indicate that the fragments of the past, either extant or ruined, can be the agents of change in the present.
Figure 7.26 The main terrace and villa building of Luyanjingshe (鹿岩精舍), equipped with the new service facilities (Photo by author, August 26, 2013)

Figure 7.27 The statue of Cao Xueqin in front of the Cao Xueqin’ Memorial (Photo by author, June 16, 2009)
Besides plant display and cultural resource management, the creation of water scenes was another key issue in the development of the Beijing Botanical Garden. The
property had lacked sufficient water to display aquatic plants and attract tourists, because
the original site had no lake or pond, and its limited spring and uneven rainfall could not
support perennial large-scale water bodies. Despite such difficulties, the builders of the
botanical garden managed to create the 4000-square-meter Limpid Lake (澄碧湖) in
1982-1988 by excavating a section of the existing stream channel between the Temple of
the Reclining Buddha and the Xiangyi Road and lining it with waterproof material.593
The lake bank was designed in a curved and irregular pattern and landscaped with
grasses, rocks and stakes, and the surrounding area featured extensive lawns dotted with
clumps of trees of the genus Tilia (linden) and Populus (poplar) as well as those with
splendid autumn color.594 Although limited in scale, the Limpid Lake was an
improvement in the scenery and plant display.

However, the mass construction that had continued since the 1980s intensified the
water scarcity of the Beijing Botanical Garden. In the early years of the twenty-first
century, the botanical garden consumed an average of 2381 cubic meters per day with the
peak daily demand as high as 5428 cubic meters, whereas the maximum yield of its well
was merely 3000 cubic meters.595 Thus, in hot summer seasons with limited rainfalls,
there was no enough water for all demands. Worse still, the spring in the Cherry Valley
almost dried up in the recent years and could not support a perennial watercourse; thus
there was no water in the channel of the main basin stream in the dry season. As a result,
the garden staff mainly relied on deep groundwater for cultivating plants, but this posed a
different problem because plants could be harmed if irrigated directly with such cold
water.596 Worse still, it was impossible to transfer water from elsewhere: the springs at
the nearby Jade Fountain Hill also dried up, while the Beijing-Miyun Aqueduct stopped
providing water for irrigation along its course in 2001 (see Chapter 5). For the purpose of supporting the existing landscape irrigation and future development, the Beijing Botanical Garden had to find more water sources within its own boundaries.

A large-scale rainwater-harvesting system was thus installed in 2003 to take full advantage of what little rain the site of the Beijing Botanical Garden did receive. The system is a chain of six man-made lakes created by lowering and enlarging the existing stream channels (Figure 7.30). Covering an area of 39,000 square meters, the three lakes in the upper stream have a storage capacity of 20,000 cubic meters, with the previous dam reservoir (the first lake) as the main basin. To sustain a perennial watercourse, the engineers also installed a pumping system that keeps water recirculating from the third lake, replenished by the nearby mechanical wells whenever needed, through the underground pipelines to the springhead, whence it could plunge back down to the third lake. In the lower stream, the enlarged Limpid Lake and two new lakes together cover an area of 60,000 square meters and have a storage capacity of 100,000 cubic meters. The southernmost lake can receive surface run-offs from the adjacent drainage basin. In addition, the rainwater-harvesting system includes a rubber dam at the lowest lake for drainage control of the entire system, waterproofing layers at the sandy and stony bottoms of all the water bodies, and a number of bridges across the watercourse. Overall, the geographical arrangement made it possible for the system to retain the surface runoff of the two drainage basins over 600 hectares in size.
The rainwater-harvesting system was constructed hand in hand with its landscaping, and in some aspects, hydraulic concerns posed constraints on the arrangement of landscape elements. For example, although a sinuously shaped the water body had a lovely scenic quality, the shape could not be too sinuous lest it impact flood drainage. Likewise, for preventing runoff from carrying sediments into the lakes, the fringes of the lakes were installed with swathes of plants that acted as buffer strips. In other aspects, hydraulic engineering and landscaping were integrated in non-conflicting ways, which is best seen in the treatment of the connecting waterways of the lakes. The
previous dam in the upper stream was turned into a waterfall featuring rocks and mist spray, and the two sides of its connecting stream were installed with the wooden trails and pavilions (Figure 7. 31). The drops in elevation along the rest of the previous stream channel were treated in a multi-cascading manner and decorated with rocks (Figure 7. 32; Figure 7. 33). In addition, hydraulic engineering was sometimes adjusted to provide opportunities for the creation of scenery, such as the waterproofing layers at the water bottoms that were extended way beyond the edges of the water bodies, with the spaces in between for aquatic plants and ornamental rocks. Despite their technical differences, all these water scenes were highly consistent in the naturalistic style and rock arrangement.

Figure 7. 31 The waterfall (the former dam reservoir) in the middle of the Cherry Valley (Photo by author, 12 April 2004)
Figure 7.32 The stepped drop at the mouth of the Cherry Valley (Photo by author, 12 April 2004)

Figure 7.33 The stepped drop between the fourth and fifth lakes (Photo by author, 12 June 2009)
Although required for scenic beauty, irrigation, and aquatic plants display, the rainwater-harvesting system of 2003—which still exists today—is problematic with respect to the water resource management. The fact that the system has to be supplemented by well water indicates that the rainwater collection is not sufficient to support a perennial watercourse. As a site that is open year-round, the botanical garden has to sustain its water scenes all the time for the sake of tourists, worsening the over-exploitation of groundwater that has been already serious in Beijing (see Section 1 of Chapter 5). Meanwhile, the enlargement of the water surfaces means more loss of water through evaporation, while seepage through cracks of waterproofing layers is unavoidable. Therefore, the visually pleasing landscape we see today is quite possibly unsustainable in terms of water use. Paradoxically, rather than relieving the water scarcity of the Beijing Botanical Garden, the new water system aggravates it.

Like the water scarcity, three other old problems that have troubled the Beijing Botanical Garden since its early years persist in recent years. First of all, the Western Hills Forest Plantation has not yet transferred the hillside forest within the planned boundary of the botanical garden, and its staff even attempt to include the forest as part of the Western Hills National Forest Park under the forestry department (see Section 3 of Chapter 4). Second, there are still a few villages and those who occupy historic properties that have not been relocated, such as the Tongyu Village (佟峪村) and the Chinese Academy of Agricultural Sciences apiary in the Temple Guanghui’an. Lastly, the Chinese Academy of Sciences botanical garden that was originally planned as an integral part of the Beijing Botanical Garden has been operated separately ever since the Cultural Revolution. Whether these problems will be eventually solved in the near future is
uncertain, but the ways that they are addressed will surely have big impacts on the
landscape change of the Beijing Botanical Garden.

Summary

The two case studies of this chapter, sites that are different in scale and function,
show how complicated modern design in the Western Hills can be. The present-day
appearances of the Fragrant Hill Hotel and the Beijing Botanical Garden are the products
of the constant interactions among environmental design professionals and stakeholders
in public and private sectors. The hillside land is topographically challenging, and the
various natural and historic objects upon it pertain to people of different backgrounds.
Thus the processes of design and construction have involved constant negotiations among
stakeholders. Among the issues revealed in the histories of the Fragrant Hill Hotel and
the Beijing Botanical Garden, four are of particular importance: the suitable land use
pattern of hillsides, the ideal relationship of new developments with historic remnants,
the appropriate formal style of new developments, and the effective negotiation
mechanism. These are actually the common issues concerning the modern design in
heritage landscapes like the Western Hills.

It is difficult to design sustainably in the Western Hills because its hillside creates
unstable inclined grounds that must be modified through surface leveling and foundation
reinforcing so as to accommodate large buildings. Furthermore, the immature soils on
slopes and along mountain streams require waterproofing treatment for the creation of
water scenes and soil replacement for the cultivation of plants. The storm runoffs on the
hillsides pose more threat to man-made structures and human activities than that on
flatlands, making the investment in drainage systems and bridges over gullies indispensable. Most importantly, because the Western Hills lacks large natural water sources, wells, pumps, pipelines, or rainwater-harvesting systems have had to be installed to support large-scale development. Also problematic is that the hillside, especially the upper hills, features limited or no basic urban infrastructure. With all these constraints, the Western Hills is not suitable for intensive land use. Nonetheless, the rugged terrain was still chosen to be the site for the Fragrant Hill Hotel and the Beijing Botanical Garden because its topography and vegetal cover was an attractive idyllic setting for buildings, and its varied elevations and orientations are good for the survival of a wide variety of plants.

The Western Hills is a challenging place for designers because of its historic features. This chapter shows two types of spatial relationship between the old and the new: new development that occurs inside historic properties, as in the case of the Fragrant Hill Hotel; and remnants of the past that are enclosed by new establishments, as in the case of the Beijing Botanical Garden. The former often arouses much more controversy because the integrity and authenticity of the old, rather than merely its settings, are directly destroyed. In such a situation, new developments are unlikely to be well received no matter how brilliant the designer may be. On the other hand, the Beijing Botanical Garden mainly involves the adaptation of the old to the new functions of the larger settings, such as the take-over of old tombs and the invention of memorials for the purpose of mass tourism. Such development can also be controversial, especially when the previous occupants are ejected, as seen in the long battle between the botanical garden and the Chinese Academy of Agricultural Sciences’ use of the Guanghui’an
Temple for bee keeping. But, in comparison, this type of relationship is generally more acceptable than the former one from the perspective of historic preservation.

The treatment of both the natural and historic features of the Western Hills also involves the issue of formal style. Designers have to make choices about how new additions should be in juxtaposition with existing characteristics of the heritage landscape. In the case of the Fragrant Hill Hotel, Pei and his co-designers focused on the symbolic variation of the indoor/outdoor relationship, water scenes, rockeries, white stucco, gray clay tiles and frame windows of traditional Chinese gardens in the lower Yangtze River. This pursuit of historical continuity is problematic because it ignores the fact that the imperial gardens of Beijing and the residential gardens of southern China are regionally different, and that the large man-made pond is not ecologically sound due to the water scarcity of the hillside. In the case of the Beijing Botanical Garden, the most specialist gardens are designed in a naturalistic landscape style, featuring rolling lawns, lakes, serpentine paths and groves of trees borrowed from English landscape gardens as well as rockeries from traditional Chinese gardens. This style is no less problematic than Pei’s: its style is in jarring contrast to the adjacent imperial gardens like the Summer Palace, not to mention the six lakes that are expected to save water but end up consuming more. While the designers of both projects evidently aspired to find new formal expressions that were in continuity with the old ones and also suitable for the hillsides, the result was mixed.

Last but not least, many of the obstacles facing the builders of the Fragrant Hill Hotel and the Beijing Botanical Garden result from the lack of an effective mechanism of negotiation. At the level of the municipal government, departments that are responsible
for different public assets usually only look after their own interests. For example, the Western Hills Forest Plantation, an affiliate of the municipal forestry department, is not willing to transfer its forest resource to the municipal park service that is responsible for the botanical garden because it constitutes a loss of territory and power for the plantation. Likewise, the Fragrant Hill Park Administration did not criticize the Fragrant Hill Hotel until the latter was entirely taken over by the First Service Bureau, which it regarded as a competitor. Similar problems also exist among the environmental design professionals with disparate focuses. In the rainwater-harvesting project of the botanical garden, the landscape designers complained that the hydraulic engineers did not allow them to design the lake banks with sinuous shapes because of the flood-drainage concern. In the case of the Fragrant Hills, the civil engineers thought that the designers’ vision was uneconomic in terms of construction. In addition, there is also lack of communication between the municipal government and local community, as seen in the peasants’ opposition to the botanical garden after losing their farmlands and being relocated. Because of the variety of intentions and functions that may influence the design and construction in the Western Hills, it is impossible to devise one set of design guidelines that would be adopted by all stakeholders. And in all heritage arenas, there are always tradeoffs that must be made when making decisions about the treatment of the old and the addition of the new. It is certainly unfair to expect those who lost due to the new developments to be supportive and cooperative; instead, an alternative path would be to establish an effective interaction mechanism that allow for providing adequate compensation for those adversely affected and for reconciling the conflicts among professionals, government departments and local communities.
Notes


522 There are also some other professionals participating in the design of the building part: the J. Roger Preston from Hong Kong is in charge of the mechanical and electrical issues, and the Dale Keller & Associates from Hong Kong is responsible for the interiors. See the website of Pei Cobb Freed & Partners Architects LLP, accessed September 23, 2014, http://wwwpcf-p.com/a/p/7905/s.html.

523 Ibid. This information concerning the number of guest rooms and the areas of services facilities is based on what the hotel was like upon its completion of the hotel in 1982. The hotel we see today is a little different because it was partially renovated in 2007.


525 This is based on the interview of Yang Dongjiang with Pei on 30 September, 2007 in the latter’s office in New York. See Yang Dongjiang 杨冬江, Wei Zhongguo er sheji: jingwai jianzhushi yu zhongguo dangdai jianzhu 为中国而设计: 境外建筑师与中国当代建筑 [Design for China: foreign architects and Chinese contemporary architecture] (Beijing: China Architecture & Construction Press, 2008), 41-44.


528 Philip Jodidio, I.M. Pei: Complete Works (New York: Rizzoli, 2008), 181-182.

529 Pei’s thesis design was finished under the general instruction of Walter Gropius (1883-1969) who agreed on the possibility of a combination of modernist design conception and tradition features from eternal habits of people. See I.M. Pei, “Museum for Chinese Art, Shanghai,” Progressive Architecture 29 (February 1948): 50-52.

530 This is based on the interview of Pei with the editors of the Architectural Journal Magazine (Chinese) on April 26, 1981. See I.M. Pei 贝聿铭, “Bei Yuming tan


532 Pei, “I.M. Pei talks on Chinese architecture.”

533 Liu and Tan, “Beijing Xiang Shan fandian de tingyuan sheji.”


535 Liu and Tan, “Garden design of Xiang Shan Hotel.”


537 Ibid., 139.

538 See Wang Tianxi 王天锡, “Xiang Shan fandian sheji dui Zhongguo jianzhu chuangzuo minzu hua de tantao” 香山饭店设计对中国建筑创作民族化的探讨 [The Design of Xiang Shan Hotel], *Jianzhu xuebao* 建筑学报 [Architectural Journal] 6 (1981): 13-18. Wang Tianxi was working at Pei’s office when the Fragrant Hill Hotel project was underway, and his article confirmed my observation that Pei did pay great attention to the preservation of the existing trees.


542 Liu and Tan, “Garden design of Xiang Shan Hotel.”

543 Ibid.

544 See Beijing shi diyi shizheng gongsi xianzai dui 《北京市第一市政工程公司直属队》 “Xiang Shan fandian yi, er hao qiao” 香山饭店一、二号桥 [The 1st and 2nd bridges of the Fragrant Hill Hotel], *Shizheng jishu* 市政技术 [Municipal...
The bridge for guests is 10.8 meters in length and 6.1 meters in width, and its arch has a span of 6 meters. The bridge for the hotel staff is 13.547 meters in length and 9.76 in width, and its arch has a span of 7 meters.

545 Xu, “The design and construction of the Fragrant Hill Hotel.”

546 Ibid.

547 Liu and Tan, “Garden design of Xiang Shan Hotel.”

548 Xu, “The design and construction of the Fragrant Hill Hotel.”

549 See Guo Ying 郭英, “Cong jingying jiaodu kan Xiang Shan Fandian” 从经营角度看香山饭店 [The Fragrant Hill seen from the perspective of management], Jianzhu xuebao 建筑学报 [Architectural Journal] 3 (1983): 64-69. To support the hotel’s modern facilities, the engineers built 20 km of high-voltage lines, 8 km of underground telephone wires, and 10 km of sewage pipes.


551 Xiang Shan gongyuan guanli chu, Xiang Shan gongyuan dashi ji (Dongjin-1989), 173.


554 Xiang Shan gongyuan guanli chu, Xiang Shan gongyuan dashi ji (Dongjin-1989), 173-193.


557 See Gu, “Beijing Xiang Shan fandian jianzhu sheji zuotan hui.”

558 Yang, Wei Zhongguo er sheji, 44.

559 The thirteen gardens that comprise the Ornamental Plant Section include Rose Garden (月季园), Lilac Garden (丁香园), Magnolia Garden (木兰园), the Perennial Garden (宿根花卉园), the Crabapple-Cotoneaster Garden (海棠栒子园), Ornamental
Peach Garden (碧桃园), Tree Peony Garden (牡丹园), Herbaceous Peony Garden (芍药园), Mume Flower Garden (梅园), Bamboo Garden (集秀园), Hosta Garden (玉簪园) the Crape Myrtle Garden (紫薇园), and Herb Garden (草药园). The Arboretum is divided into Coniferous section (银杏松柏区), Acer-Rosa Section (槭树蔷薇区), Tilia-Populus Section (椴树杨柳区), Magnolia-Berberis Section (木兰小檗区), Platanus-Quercus Section (悬铃木麻栎区), and Paulownia-Fraxinus Section (泡桐白蜡区). See the website of the Beijing Botanical Garden, accessed 14 September 2014, http://www.beijingbg.com.


562 The two republication botanical gardens are located in Nanjing’s Purple Mountain and the Lu Mountain (庐山). The new ones are situated in Beijing, Kunming, Wuhan, Guangzhou, Hangzhou, Lijiang, Xishuangbanna, Hainan, Shanghai, Guilin, Chongqing, Xi’an, Shenyang, and Ha’erbin. See Yu Dejun 俞德浚, “Shinian lai woguo zhiwu yuan shiye de fazhan” 十年来我国植物园事业的发展 [Chinese’s botanical gardens in the past ten years], Shengwu xue tongbao 生物学通报 [Bulletin of Biology] 10 (1959): 449-455.

563 Beijing zhiwu yuan guanli chu, Beijing zhiwu yuan zhi, 31.

564 Sun, "Beijing zhiwuyuan choubei jianshe shiliao.”


567 Ibid., 245.


569 To endow the Buddhist temples with new uses is inevitable because their original monks left after the Communist Revolution. See Chapter 3.

Zhongguo kexue yuan and Beijing shi renmin weiyuan hui, “Choujian Beijing zhiwu yuan jianyi shu.”

Beijing zhiwu yuan guanli chu, Beijing zhiwu yuan zhi, 32. These six additional sections include: the aquatic plant section, the garden art section, the North China forest section, the nursery, the exhibition halls, and the staff living area.

Yu, “Shinian lai woguo zhiwu yuan shiye de fazhan.”

Zhongguo kexue yuan and Beijing shi renmin weiyuan hui, “Choujian Beijing zhiwu yuan jianyi shu.”

Beijing zhiwu yuan guanli chu, Beijing zhiwu yuan zhi, 32.

Beijing zhiwu yuan guanli chu, Beijing shi zhiwu yuan dashi ji (627-1990), 23-34.

Li, “Fengyu licheng liushi zai—Zhongguo kexue yuan Beijing zhiwu yuan lishi huigu.” The garden was abolished in 1970 and did not resume till 1972, but the anarchists took over it again in 1975.

Beijing zhiwu yuan guanli chu, Beijing zhiwu yuan zhi, 261. The academy not only occupied the temple but also erected a 2600-square-meter new building thirty meters north of it.

Zhongguo kexue yuan and Beijing shi renmin weiyuan hui, “Proposal for Building Beijing Botanical Garden.”

Beijing zhiwu yuan guanli chu, Beijing shi zhiwu yuan dashi ji (627-1990), 19-21.

Ibid., 32.

Ibid., 34, 39.

Ibid., 20, 23.

Beijing zhiwu yuan guanli chu, Beijing zhiwu yuan zhi, 34, 52-56.

Beijing zhiwu yuan, “Beijing zhiwu yuan guihua shuoming.”

For a complete list of the gardens and buildings, see the official website of the Beijing Botanical Garden: http://www.beijingbg.com/English/e.asp.

This style is best reflected in the six specialist gardens designed by the Beijing Municipal Park Service and the Beijing Institute of Landscape and Traditional Architectural Design and Research (北京市园林古建筑设计研究院) in the 1980s-

590 Beijing zhiwu yuan ganli chu, Beijing zhiwu yuan zhi, 146-153.

591 Beijing shi yuanlin ju 北京市园林局 ed., Beijing youxiu jingguan yuanlin sheji 北京优秀景观园林设计 The excellent landscape designs in Beijing (Shenyang: Liaoning Science and Technology Press, 2004), 21-29. Cao Xueqin was a Chinese writer during the Qing dynasty. He is best known as the author of Dream of the Red Chamber, one of the four great classical novels of Chinese literature.

592 Beijing zhiwu yuan ganli chu, Beijing zhiwu yuan zhi, 169-170.

593 Beijing zhiwu yuan ganli chu, Beijing shi zhiwu yuan dashi ji (627-1990), 48-50.

594 Beijing shi yuanlin ju ed., Beijing yuanlin youxiu sheji jijin, 126-128. The Limpid Lake and its surroundings was modified in the water system restructuring of 2003; thus my description of its conditions in the 1980s is entirely based on this book.


597 Cheng and Zhang, “Jishui yuanlin zai Beijing shi zhiwu yuan de yunyong.”

598 Yu and Wang, “Shuili sheji yu yuanlin sheji jiehe de shili—Ji Beijing zhiwu yuan shuixi gongcheng.”

599 Ibid.

600 Ibid.


602 See Yin Hao 尹豪 and Liu Hongbin 刘红滨, “Beijing shi zhiwu yuan shujing gongcheng” 北京市植物园水景工程 The water scenes project of the Beijing Botanical Garden, in Beijing yuanlin xuehui guihua sheji zhuanye fu han zuopin canzhan yu kaochao zhuanti 北京园林学会规划设计专业赴韩作品参展与考察专辑 北京园林论文集 Beijing Institute of Landscape Architecture’s visit to South
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Cheng and Yan, “Beijing zhiwu yuan shuiti gongcheng jianshe yu sikao.”

The relocation of the Tongyu Village was initiated in 2010 and is still under way. See “Beizhi yu nanzhi heban cheng ‘guojia zhiwu yuan’ tishang richeng” 北植与南植合办成“国家植物园”提上日程 [The Beijing Botanical Garden and the Chinese Academy of Sciences’ botanical garden are to be merged into the National Botanical Garden], accessed October 14, 2014, http://www.chla.com.cn/htm/2010/0122/48853.html. The sanatorium of the police department has been moved to a piece of land, 1.33 hectares, east of the East Ring Road in 1982. See Beijing zhiwu yuan guanli chu, Beijing shi zhiwu yuan dashi ji (627-1990), 53.

8. Conclusion: Landscape Agency in Modernity

The modern landscape of the Beijing Western Hills embodies a basic dialectic in cultural landscape studies that Paul Groth and Chris Wilson have called “the relationship between agency and structure.”606 The influence of social structure is obvious: the economic globalization and international relations that increasingly bound China and the West together simultaneously set in motion a series of changes in the Western Hills at various moments in history. The incidents of 1860 and 1900 that forcefully opened China to the outside world made the architectural monuments of the Western Hills accessible to foreign visitors, turning the area into a world-renowned tourist destination. The subsequent regime transitions from monarchy through capitalist republic to socialist republic, together with the Japanese occupation in 1937-1945, made possible the changes in the administration and management of the Western Hills. However, the Western Hills would have not evolved as seen in the century since 1912 if it were merely a passive result of these global and national processes. As shown in the previous chapters, the specific ways in which the Western Hills has been transformed are also determined by the specificity of the landscape itself: the landscape is composed of a variety of natural and cultural features that pose unique challenges and opportunities; and it is proximate to a city of national and global importance which encountered new problems in modernity that had to be solved in conjunction with the management of its adjacent rugged terrains. It is the procedures and methods of solving these common problems that have reshaped the physical landscape and created new social relations. Social structure and landscape agency are not contradictory but unified in the same process of problem solving.
This structure-and-agency dialectic manifests itself in the emergence of a new class of environmental design specialists, a phenomenon deriving from the national tendency to adopt the disciplinary specialization of knowledge associated with the Western modernity. The thematic chapters of this dissertation together bring to the foreground five new disciplines that have been particularly instrumental in solving problems of the Western Hills in relation to the city. Forestry was introduced in the 1910s in response to the frequent floods originated from denuded mountains and vast hillside lands laid waste across the country caused by excessive logging, farming, and ranching, and the Western Hills became the first to be reforested because the land use reform in the vicinity of the capital city could draw wide attention and inspire similar projects elsewhere. The period of 1928-1937 witnessed the first group of architects and engineers educated in the West who joined the municipal government to take care of old buildings, gardens, and hydraulic facilities in the Western Hills. The primary impetus behind these efforts was cultural tourism that was seized as a remedy for urban Beijing’s economic depression caused by the urban-rural separation and the relocation of the central government. For the purpose of accommodating Japanese immigrants and sustaining military operations, the Japanese made the first modernist master planning for Beijing and other cities in North China, imposing the land use regulations that reserved the Western Hills as a green area for recreation. In the later half of the twentieth century, landscape architects with architectural and horticultural education began to cooperate with architects and engineers in hillside development where scenic quality was necessary for recreation and tourism. Each of these endeavors has continued throughout the years.
after its debut, regardless of regime change, and the accumulative impact on the
landscape of the Western Hills is impressive.

While these new specialists did solve many problems of the Western Hills that
occurred in modernity and especially pertain to the urban development of post-monarchy
Beijing, some of their solutions have caused new problems. Such ironic consequences are
most visible in the physical results of the new hydraulic infrastructures. The advanced
well drilling and pumping technologies were introduced in response to the contradiction
between the shrinking spring yields of the Western Hills and the intensification of
agricultural production and urban growth, but it actually stimulated more demands for
water supply and led to the over-proliferation of artificial wells that lowered the regional
water table. As a result, people now install costly and controversial man-made water
scenes in historic areas that previously featured naturally spring-fed streams. Similarly,
the trans-basin water transfer projects that free Beijing from its long dependence on the
limited spring water of the nearby Western Hills never quench Beijing’s great thirst. They
simply support a never-ending urban sprawl, which necessitates even more water and
increasingly encroaches on the lower hillsides of the Western Hills that are supposed to
be green. The failure of the hydraulic projects tells that disciplinary solutions focusing on
one type of problem run the risk of ignoring other dimensions of the reality and creating
new problems.

Relatively hidden are the social conflicts between the new disciplinary efforts and
the lifestyles of local residents. With the middle and upper Western Hills reserved for
forestry and recreation, peasants have been forbidden from farming, logging, and
ranching on the hillsides. Consequently, they adopted a negative attitude toward
reforestation, complaining that new forests would be owned and protected by the municipal government and serve urbanites only. With historic properties inscribed as cultural heritages, previous occupants who used them for purposes other than tourism were forced to move out, those living in the vicinity suffer from height and style restrictions on their buildings, and coal mines were closed to protect springs within these properties. Cultural tourism may contribute to the overall economy of Beijing, but those whose lives are directly hampered by it do not necessarily get a slice of the proverbial cake. Most conflicting is perhaps the land acquisition and relocation to make rooms for new developments, as seen in the case of the Beijing Botanical Garden in which local peasants who lost vast farmlands due to relocation then rose to vandalize trees and reoccupy lands for farming. The fundamental cause of these social conflicts lies in the nature of modern specialization: each discipline comes into being by identifying a specific problem and designing solutions accordingly. But each discipline is working in a complex world in which many systems interact in uncertain ways, and there is usually no agreement between stakeholders as to what the most important problem is. A solution that is well justified from one disciplinary perspective often ignores its possible impacts on other related systems.

Moreover, the problem-defined system of specialization has been bureaucratically institutionalized: each type of the components of the Western Hills is now under the management of one distinctive government department. The Beijing Municipal Commission of Urban Planning (北京市规划委员会) is responsible for examining and approving planning and design schemes concerning the land use in the Western Hills, but it does not directly involve in the management of resources and properties. It is the
Beijing Municipal Bureau of Landscape and Forestry (北京市园林绿化局) that takes care of most of the reforested Western Hills through its subordinate Western Hills Forest Planation, and it is the Beijing Water Authority (北京市水务局) that administrates the hydraulic facilities. Historic sites scattered all around the Western Hills are usually subject to the management of the Beijing Municipal Administration of Cultural Heritage (北京市文物局), but a few large-scale open spaces, such as the Summer Palace, the Fragrant Hill Park, and the Eight Great Sites are subject to the management of the Beijing Municipal Administration Center for Parks (北京市公园管理中心) which is also responsible for a few modern developments like the Beijing Botanical Garden. Overall, the present-day institutionalism with respect to the Western Hills has an exact correspondence with the class of specialists that emerged in response to the kinds of modern problems posed by that same rough terrain. This fact extends the agency of the mountainous landscape to a broader social formation in modernity.

Like the water issues and social conflicts, this type-based institutionalism causes new problems. Each type of the landscape components is part of a single geographic unit, and to administratively separate them from each other makes it difficult to manage the Western Hills as a whole. The problem deriving from the absence of a unified administrative system can be seen in the case of the Beijing Botanical Garden in which the Western Hills Forest Plantation is unwilling to hand over the forest as planned. It can also be seen in the hostile attitude of the Fragrant Hill Park Service toward the Fragrant Hill Hotel after the latter was transferred to the municipal service bureau. Nonetheless, to solve the problem caused by one type of the landscape components often requires its specialists to give consideration to other relevant types. This has been seen in the
separation of the Jingmi Channel from the Kunming Lake (in the Summer Palace) and also the separation of the Yongding Channel from the Yuyuantan Lake, both of which are designed to stabilize the water levels of the lakes for recreation, such as boating.

Likewise, the reforestation of the Western Hills has been required to achieve scenic beauty because of the adjacent historic tourist sites, let alone its mission to prevent flooding and soil erosion that is shared with hydraulic projects like dams and reservoirs. Moreover, the land development projects, such as the Fragrant Hill Hotel and the Beijing Botanical Garden, all involved a variety of physical elements that had to be addressed in synthetic ways. Therefore, if there were no efficient coordination and cooperation between the disparate government departments, the physical and functional unity of the mountainous landscape would be cut apart.

In addition, to categorize any individual component of the landscape according to this bureaucratically institutional system can be difficult. The Summer Palace, for instance, has been managed as a public park ever since the late 1920s, and it is now still under the direct administration of the municipal park service. Yet, simultaneously it is a cultural heritage site registered at both the national and UNESCO’s levels, and also a hydraulic facility that plays a pivotal role in Beijing’s water supply system. To manage the Summer Palace as a public park means an intensive recreational development that contradicts heritage preservation and hydraulic efficiency, but it would also arouse much resentment among the general public if preservation and efficiency prevailed. A mixed site like the Summer Palace is complicated, deserving a paradigm of management that does not exist in the current institutional system.
Finally, the bureaucratic institutionalism is not so capable of dealing with change. A component of the landscape, even not as mixed as the Summer Palace, can be endowed with new values and meanings under a different social context. This phenomenon is best seen in the increasing recreational uses of hydraulic facilities and man-made forests seen in the Western Hills since the 1980s. Nonetheless the government departments that manage these landscape resources have been established according to the previous problems, with their primary responsibilities defined and specialist knowledge equipped accordingly. The frustrated transition of the Western Hills Forest Plantation to the Western Hills National Forest Park has shown how such a government department was caught up in its previous mission of soil and water conservation and did not know how to balance that with tourism. The plantation staff themselves also lacked necessary skills in landscape design and tourist marking, not to mention the lack of funding for infrastructural construction. Such kinds of problems hamper an individual component or a type of components to be instrumental in new ways with respect to certain changing conditions of the real world.

To sum up, the modern disciplinary specialization and its resultant type-based bureaucratic institutionalism have created a variety of new problems while solving the previous ones posed by the Western Hills in the twentieth century. The intertwined relationship between the Western Hills and the city of Beijing epitomizes how mountainous areas of China have interacted with their adjacent urban centers and been instrumental in the broader social formation. Because China’s modernist transformation is essentially a process of globalization, the modern history of the Beijing Western Hills should be seen as a local variation of the changing global city-mountain relationship in
modernity, revealing a critical dimension of social formation of our times. I would argue that a mountainous landscape like the Western Hills will continue to interact with its social structure through a problem-solving-and-creating mechanism in the future, and therefore we should not expect to design certain perfect solutions to the current predicament of specialization and institutionalization that would not cause new troubles. However, with the lessons learned from the Beijing Western Hills, we know at least that a more integrated approach to historic mountainous areas near urban centers will be more socially efficient and ecologically sound. At the government level, such approach might lie in a better inter-departmental coordination, a restructuring of the existing departments, or the creation of a new comprehensive agency to manage a geographic unit as a whole. Certain transdisciplinary modes of inquiry should be encouraged in the academia: landscape scholars and educators should identify more synthetic ways in which we train professionals in specialties and mastery of skills.

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