

**Study on the Composition and Characteristics of External
Spaces of Public Architectures in Nanjing,
Republic of China, dated 1912–1949**

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Chapter 1 Preface

1.1 Background

The Republic of China (ROC, 1912-1949) was the initial stage of transformation of Chinese society from conventional to modern, and served as an important turning point in Chinese historical development. Western culture exercised comprehensive influences over political, economic, ideological fields and life etc. in China during such stage that links the past and future.¹⁾ Chinese garden has gone through the test of Western culture under such historical background, thus taking on new development directions: (1) construction of parks; (2) shift to “combination of Chinese and Western style” or “Western style” in gardening styles.²⁾ The gardens in the ROC displayed unique cultural features which differed from conventional features or modern ones. Thus the stage of the ROC can be regarded as a special stage in garden history, and was an indispensable part in research on Chinese garden history.

Research on history of the ROC is always an important part of research on Chinese modern history. Chinese history has become increasingly open and tolerant along with the ever-deepening reform and opening up^① in recent years, which has brought about more and more frequent exchanges between mainland China and Taiwan^②. As an important area inheriting the culture of the ROC, Taiwan has received more and more attention toward protection and development of the cultural heritages of the ROC based on cultural recognition on both banks of Taiwan Straits. As the capital city of the ROC, Nanjing witnessed urban construction that lasted over 10 years especially after publication of “Capital Plan” in December 1929, thus leaving over numerous buildings and gardens of the ROC. Located in the middle on the southern-northern axis, Nanjing enjoys convenient traffic conditions, and has formed all-inclusive cultural features. Thus its architectural styles integrate northern dignified and profound features, and southern subtle and refined ones. Compared with Western orientation in urban buildings of ROC in Shanghai, Tianjin and Guangzhou etc., those in Nanjing can be said to have made reference to the ancient and present buildings, incorporated diverse

^① The Chinese economic reform (改革開放) refers to the program of economic reforms called "Socialism with Chinese characteristics" in the People's Republic of China that were started in December 1978 by reformists within the Communist Party of China (CPC) led by Deng Xiaoping.

^② Research on the history and culture of the ROC was a forbidden discipline in mainland China before reform and opening up.

Sino-foreign features and integrated southern and northern styles, which have demonstrated royal charms of Nanjing culture, and is reputed to be a miniature of Sino-foreign architectural art during the specific historical period when the Western culture was extending its influences to the east. Therefore such buildings there rank first nationwide, and have demonstrated typical significances in the world as a whole.³⁾

Generally speaking, Nanjing has displayed quite significant features in urban buildings since the ROC. For example, the government of Kuomintang advocated national essence and spirit in administrative buildings, thus leading to a number of buildings in conventional Chinese styles built with modern construction technology. Many architects have strived to create new national forms of Chinese buildings, and have exercised profound influences in architectural history. Despite of that, Western classical architectural thoughts were still on the upswing, and Western modern architectural thoughts have gradually risen, which has inevitably impacting Nanjing as an ancient historical city. Thus a number of buildings with significant Western styles came into being in the middle of the 1920s. And a great many buildings have tended to display modern features, thus laying a foundation for subsequent urban construction in Nanjing. At present, a large number of diversified and unique building of the ROC have constituted unique urban culture of Nanjing, thus forming the social recognition that “Visit Xi’an and you will know the buildings in Sui and Tang dynasties, visit Beijing and you will know buildings of Ming and Qing dynasties, and visit Nanjing and you will know the buildings of the ROC.”⁴⁾

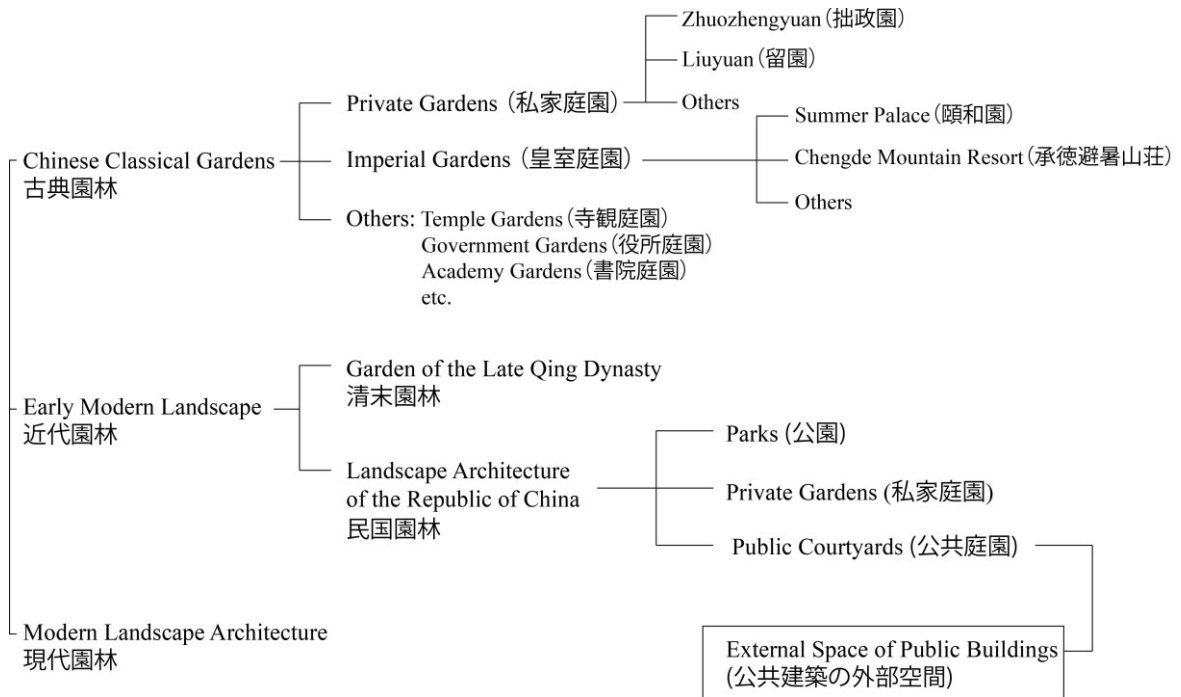


Figure-1-1 Types of Chinese Landscape

Among all classical gardens in China, imperial gardens and private gardens are the most representative.^① Their development best reflected the evolvement of classical gardens. As shown in the investigation and research, landscape architecture of the ROC can be divided into 3 categories: parks, private gardens and public courtyards (Figure-1-1).^{1) 5) 6)} The nature of a park is to serve the public; it's the type of garden commonly owned by all nationalities, social strata and industries, a place which everyone enjoys equal right to. The park showed up in China in late Qing Dynasty, but the parks in late Qing Dynasty are mostly built up by foreigners in their concessions in China, not involving

^①: Imperial gardens refer to those that directly serve the emperor. It may be built in or out of the capital, mainly serving for relaxation and sightseeing; some of them may even serve the purpose of handling governmental affairs. The characteristics of imperial gardens include: (1) grand size, large area, magnificent architectures in splendor, fully showing the imperial air; (2) diversified architectural styles; (3) complete functions. Typical imperial gardens include Summer Palace (頤和園) in Beijing and Chengde Mountain Resort (承德避暑山莊). On the other hand, private gardens refer to those owned by princes and dukes, the noble, landlords, businessmen and scholar officials, mostly in small sizes, centered at water and surrounded by architectures, which form scenic spots. Private gardens mainly serve for morality and nature cultivation, leisure and self-entertainment; most of their owners were scholars who were good at poetizing and painting, pure and lofty, graceful and elegant. Representative private gardens include Humble Administrator's Garden (Zhouzhengyuan 拙政園) and Lingering Garden (Liuyuan 留園).

the life of average Chinese. After the establishment of the ROC, the idea of public garden became consistent with democracy and republic political system advocated by the Government of the ROC. Thus, the park was made a major form of gardens by the government. Generally speaking, the parks of Nanjing have developed based on the old gardens and there are no independent and newly-built ones, thus displaying insignificant times features of the ROC, for example, Xuanwuhu Park.⁵⁾ Despite of quite flourishing construction of residential buildings in Nanjing, a large number of mansions and villas of the ROC have been preserved. However, such mansions and villas mainly focus on buildings and living, and thus courtyard construction is apparently placed in an affiliated and secondary position, merely serving as an outdoors space for use, and there are no independent courtyards like conventional private gardens.⁶⁾ Most of the public buildings of the ROC in Nanjing were built by the ROC government, especially government administrative office buildings. Due to the special urban nature of Nanjing, the city differs from the concession cities such as Shanghai, Tianjin, Tsingtao and Dalian etc. with widespread Western buildings, and demonstrates significant integrated oriental and Western features in such buildings and courtyards. What can represent ROC culture of Nanjing the best is the ROC buildings, while what can demonstrate the ROC landscape cultures of Nanjing the best is courtyards of public buildings. Thus the external space of the most representative ROC public buildings have been selected as the object for research in the thesis to analyze and explore the artistic features of such gardens and reasons for formation thereof, and lay a solid theoretical foundation for research on ROC landscape culture, which not only contributes to obtain a profound understanding of ROC landscape culture of Nanjing, but also promote in-depth research, for example, landscape analysis from the perspective of spatial composition. On the other hand, due to the aggressive development of urban construction and ineffective protection, many buildings and gardens in Nanjing have been incessantly transformed and dismantled. Thus grasping the features of ROC landscape of Nanjing is of quite important realistic significances for protecting, inheriting and developing ROC buildings and landscape culture. Meanwhile, it is of important instructive significances for construction of ROC culture in Nanjing, and can serve as a quite important reference for modern urban construction and development.

1.2 Previous Research

1.2.1 Research on External Space of ROC Public Buildings of Nanjing

(1) The current research on the external space of the ROC public buildings in Nanjing mainly focuses on general environmental summary, analysis of artistic features and cultural protection etc.,^{3) 4) 6)} and there is still blank in analysis and research on the constitutive features of the specific space. Thus to make definite the constitutive features of the ROC public buildings in Nanjing, the most representative ROC public buildings of Nanjing have been selected in the research to analyze the constitutive elements and forms of their external space, explore the constitutive features of its external space and make definite and grasp their unique cultural features of integrating the Chinese and Western styles.

(2) International research on exterior architectural space is relatively mature, especially research by Japanese scholars. The relevant researches such as spatial composition research on traditional Japanese garden by SHINJI Isoya etc., and research on the exterior space composition of modern Japanese architectural works by TERAUCHI Mikiko etc. have been rather mature.

1.2.2 Research on ROC Buildings of Nanjing

The research on ROC culture of Nanjing mainly focuses on ROC buildings, i.e. the following specific 2 aspects:

(1) Information survey and historical verification on current buildings: For example, “The Architectural Heritage of Modern China: Nanjing” edited by LIU Xianjue etc. has summarized the relevant information on modern buildings of Nanjing, mainly ROC buildings (about 190 places), with its main contents covering name, purpose, address, structure, scale, time of design, design unit and construction unit etc..⁷⁾ And there are also “Buildings of Nanjing” and “Architectural History of Nanjing” etc..^{6) 8) 9)}

(2) Research on artistic features and historical culture of ROC buildings:^{3) 10)~13)} Such researches carry out general or partial survey and analysis of the existing ROC buildings of Nanjing, and summarize their artistic features and mainly from the perspective of archeology to provide positive theoretical support for future protection and utilization.

1.2.3 Research on Landscape Architecture of the ROC

Research on Chinese garden history and garden culture mainly focuses on traditional gardens of Ming and Qing dynasties and previous ages. Though ROC history and culture have gradually received attention in recent years, there is still rather little valuable research on ROC landscape. LIU Tingfeng's research on "the characteristics of landscape architecture during the ROC" gives a general description of the survey of the development of ROC gardens and times features of ROC landscape mainly from parks and private gardens. It has been found out in the survey that principles of ROC landscape styles such as integrating Chinese and Western styles, incorporating southern and northern features, making the past serve the present, and times technology etc. have exercised quite far-reaching influences on modern Chinese landscape.²⁾ CHEN Yunxi's research on "Zhongshan Park during the ROC" ^①analyzes the features of parks during the ROC mainly from the perspectives of spatial reorganization and admiration toward Sun Yat-sen, which holds that Zhongshan Park has played a certain role in transmitting the basic concepts of three principles of the people to the society, especially common people as an important spatial venue and expression form to promote admiration toward Sun Yat-sen.^{14) 15)} The other researches on ROC landscapes are mainly some scattered introductory discussions on local ROC gardens.

There is a great shortage of research on ROC gardens in Nanjing, and there are mainly some historical summary, current development situation, protection and utilization of ROC gardens, and general survey of the garden features, for example, "*Garden Chronicle of Nanjing*" etc..⁵⁾

1.3 Research Purpose

Based on the previous research, it can be found that there is a gradual increase in research on ROC buildings in Nanjing and other places, but research on garden culture during the ROC is still rather rare. Thus the author hopes to understand and grasp the development context of garden styles during the ROC in Nanjing, and the general conditions of garden construction then,

^① Zhongshan Park: Some groups and individuals proposed to build some permanent memorial venues such as Zhongshan Memorial Hall and Zhongshan Park for permanent commemoration of the creator of the ROC when Sun Yat-sen passed away in Beijing on March 12, 1925. Thus the park named after Sun Yat-sen came into being. According to statistical data, 267 Zhongshan parks were built during the ROC nationwide in total.

make in-depth analysis of the unique historical cultural features of gardens during the ROC, and summarized the achievements, successes and failures thereof through site survey, and comprehensive and in-depth research on data and pictures from the perspective of garden culture and spatial constitution in the hope of providing important theoretical basis for future garden construction, and protection of modern legacies of China. Due to restriction by time and territory, the thesis focuses in-depth research on the constitution of external space and features of the current most representative ROC public buildings in Nanjing.

The specific contents mainly include the following 3 aspects:

(1) Analyze and study the constitutive features of external space of public buildings from the perspective of the composition elements of gardens;

(2) Analyze and study the features in dimensions and spatial forms of external space of public buildings from the perspective of spatial morphology;

(3) Analyze and study the features of flow lines and spatial layout of external space of public buildings from the perspective of the constitutive relations between buildings and courtyards.

The thesis is intended to grasp the constitutive features of external space of Nanjing public buildings (public courtyards) during the ROC, based on the aforesaid analysis.

1.4 Selection of Research Objects

The ROC public buildings can be generally divided into the following 6 categories based on the Lu H. et al.'s research on ROC buildings of Nanjing (Table-1-1).⁶⁾

Table-1-1 Categories of Public Buildings and Selection of Research Objects

	Name	Building Types	Number	Research Objects
i	Government Buildings	Political, Military Authorities	36	<i>24 central-level governmental authorities</i>
ii	Cultural Buildings	Institutions of Science, Education, Culture, Health, Sports	44	<i>Only 3 university campuses</i>
iii	Municipal Administrative Buildings	Municipal, Transportation, Telecommunications Sectors	15	These buildings are not as the research objects because of very few with a courtyard.
iv	Service Buildings	Business, Finance, Services, Entertainment, Recreation Sites	33	
v	Embassy Buildings	Embassies and Consulates to China	10	Future research objects
vi	Memorial Buildings	Tombs, Monuments	31	<i>Sun Yat-sen Mausoleum</i>

(1) Government Buildings: The central administrative organs of the national

government during the ROC were composed of five councils, eighteen ministries, and six committees. The administrative buildings used by such departments were basically funded and constructed by the government with magnificent scales and extraordinary grandeur, and were equipped with public courtyards. Among them, 9 former sites were accredited to be “**National Key Protected Cultural Relic**”^① (全国重要文化保護財), and are regarded as the first feature of ROC buildings in Nanjing.¹⁶⁾ Thus the thesis has taken all of such buildings as the research objects, and has made comprehensive analysis and understanding of the constitutive features of such buildings and courtyards. See Chapter 3 for the specific contents.

(2) Cultural Buildings: The secondary feature of ROC buildings of Nanjing is the cultural buildings in the public buildings.¹⁶⁾ Such buildings come in a large number, and are artistic, solid and practical. Among them, the most representative ones are 3 universities accredited to be “**national key protected cultural relics**”, namely the former site of National Central University, University of Nanking and Ginling College.¹⁷⁾ The chapter 4 of the thesis has taken the 3 universities as the research objects to analyze and grasp the constitutive features of different types of spaces in the buildings of the same kind.

(3) Memorial Buildings: Memorial buildings are mainly tombs of the important party and government members of national government, monument to the war deaths, and memorial buildings. The most influential thereof is undoubtedly Sun Yat-sen’s Mausoleum reputed to be “the top mausoleum in Chinese modern architectural history”, whose construction scale and political level is the highest.¹³⁾ And Sun Yat-sen’s Mausoleum is also regarded as the most representative among all the ROC buildings,¹⁰⁾ and was enlisted as the first batch of “**national key protected cultural relic**” in 1961 due to its high historical position and artistic value. The thesis has taken Sun Yat-sen’s Mausoleum, a representative of memorial buildings, as a unique case for study to analyze and grasp its unique spatial constitutional features. See Chapter 5 for the specific contents.

^① A Major Historical and Cultural Site Protected at the National Level is a monument listed as of significant historical, artistic or scientific value by the State Administration of Cultural Heritage, which is the cultural relics administrative department of the State Council of China. Selected among Sites Protected at lower levels, Sites Protected at the National Level are lawfully the monuments with protection of the highest level in China. They are prohibited from being demolished. An approval by State Administration of Cultural Heritage is obligated before a potential removal of such sites.

(4) Municipal Administrative Buildings and Service Buildings: Municipal administrative and service buildings which are laid out along the streets are mostly functional ones, and rarely have courtyard space established therein, thus the thesis has not analyzed or studied such buildings.

(5) Embassy Buildings: The embassy buildings residing in China are designed, used and managed by foreigners, thus they display significant exotic features. For example, American embassy and British embassy etc. are exquisite European courtyards with a quite high research value. In view of the difference between embassy buildings and other public buildings in user thereof, and restriction by time, the thesis will not study such buildings, and will take them as subsequent research subjects.

1.5 Research Methods

1.5.1 Investigation Methods

Firstly, literature investigation: Take “*Buildings of the ROC in Nanjing*”⁶⁾ with comprehensive description of ROC buildings in Nanjing as the basic reference, and make use of libraries and academic retrieval engine etc. to collect the public publications and electronic data etc. such as the previous relevant research theses, survey reports, historical literatures, pictures and photos related to ROC buildings of Nanjing.

Secondly, site survey: The author made five trips to Nanjing to carry out collection and sorting of relevant data during 2010 and 2012, visited the Nanjing Archive Bureau, the Nanjing Urban Construction Archives and the Second Historical Archives of China, and consulted the first-hand data on ROC buildings and gardens of Nanjing, for example, the design drawings of government buildings during the ROC etc.. At the same time, based on the investigation results, the author surveyed the former sites of government buildings, university campuses and the Sun Yat-sen Mausoleum.

1.5.2 Analysis Method

First of all, the basic data on the external space of ROC public buildings of Nanjing have been sorted out and compared in an all-round way based on the data obtained through literature investigation and site survey. Secondly, based on the results of data sorting, the specific research objects of the thesis are determined as follows from the perspective of the representativeness and

research value of the ROC gardens: government buildings, university buildings and memorial buildings. Finally, the research framework, project and contents of the thesis are determined based on the survey and results of analysis, and through making reference to the previous research contents and methods, and corresponding research work has been carried out.

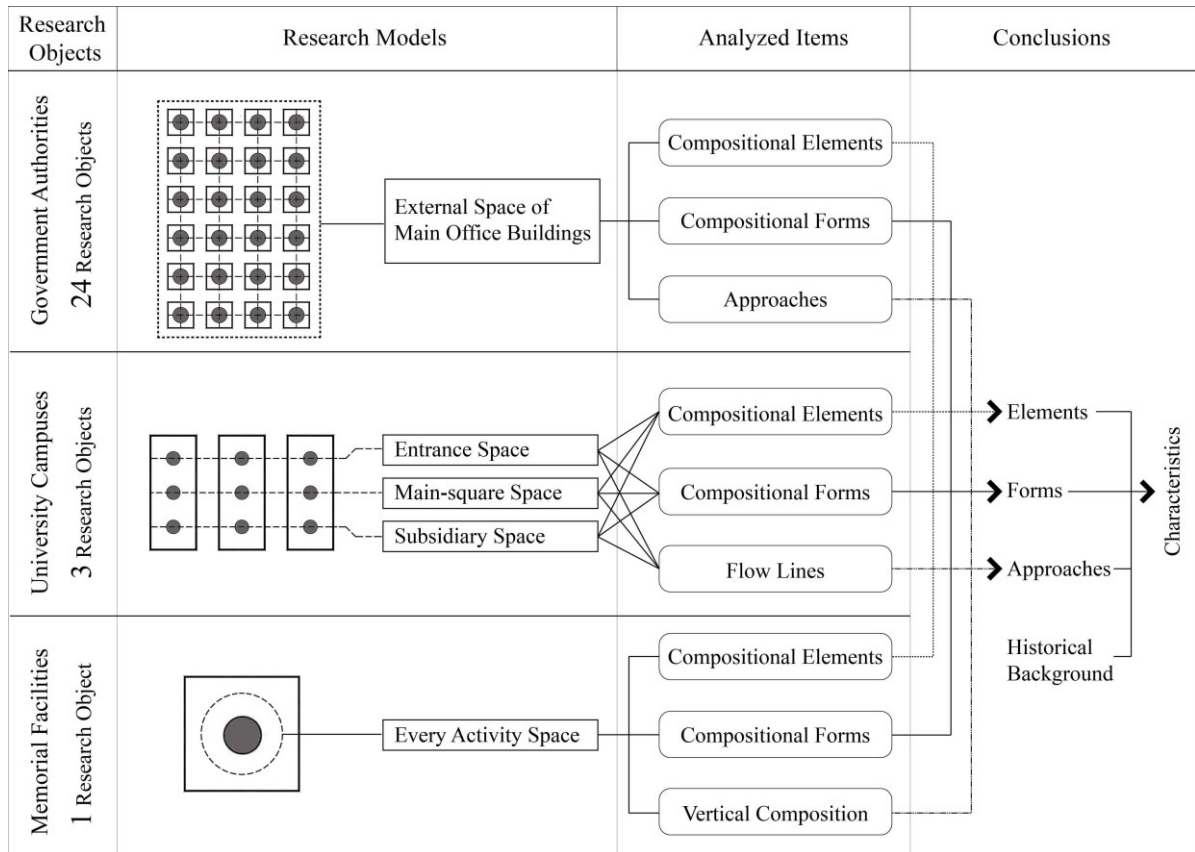


Figure-1-2 Schematic Diagram of the Analysis Method

Chapter 1 is the preface, which mainly focuses on research background and research objectives, and the research methods and composition of the thesis. Chapter 2 mainly discusses survey of development in Nanjing, and the general conditions of ROC buildings. Chapters 3 to 5 are the core contents of the thesis, i.e. the specific research on the courtyards of public buildings. (Figure-1-2)

In Chapter 3, the composition elements and forms of the external space of the 24 government buildings have been surveyed comprehensively. Then the original layout forms of the research site have been confirmed and mapped. Secondly, based on the aforesaid research and photographic data, from the perspectives of “composition elements”, “composition forms” and “approach” of the external space, the constitutive characteristics of the of the research objects are analyzed and examined through statistical analysis and case study, and

from social and times background. Finally, the typical characteristics and typical configurations of external space of the government buildings are summarized.

In Chapter 4, the thesis links 3 universities to study the characteristics of spatial composition from the 3 same types of space, i.e. entrance space, main-square space and subsidiary space based on the spatial layouts of the university campuses. Firstly, the practical forms of the spatial site of the 3 campuses have been confirmed and mapped. Then based on the previous research, the spatial composition of the three university campuses are analyzed from the three perspectives of composition elements, spatial forms (configuration forms and scales) and flow lines. Finally, based on the similarities and differences of the spatial constitutive characteristics of the three university campuses, comprehensive consideration is carried out from the perspective of cultural aspect and social background.

In Chapter 5, the most representative buildings, the Sun Yat-sen Mausoleum, have been selected from the memorial buildings as an independent research object, and the constitutive characteristics of the external space of the buildings are analyzed. Firstly, the spatial constitutive elements and practical forms of the Sun Yat-sen Mausoleum are confirmed, summarized and mapped. Secondly, the thesis has divided the whole space of the Sun Yat-sen Mausoleum into 14 subspaces according to the division of the space by the three-dimensional elements in vertical areas, and then various spaces are analyzed and examined from the 3 aspects of “composition elements”, “composition forms” and “vertical composition”. Finally, the characteristics of the overall spatial composition are summarized, and the reflection of Sun Yat-sen’s personal identity and status in spatial composition is examined from the perspective of the artistic conception.

Finally, based on the investigation and analysis of the external space of the public buildings in the aforesaid chapters, the thesis has made a general assessment, statement and conclusion about the constitutive characteristics of external space of public buildings of the ROC in Nanjing, and carry out due discussions on the future research subjects. (Chapter 6)

1.6 Research Constitution

This study consists of 6 chapters, as shown in Figure-1-3.

Chapter 1 is the preface, which mainly focuses on research background, research objectives, research methods and composition of the thesis. Chapter 2 mainly discusses the overview of Nanjing and the general conditions of ROC buildings.

In Chapter 3, the external spaces of office buildings of 24 ROC government organs in Nanjing are analyzed as research objects. The composition elements, approach characteristics, and their composition relationship of these buildings are evaluated. This chapter examines and classifies the characteristics of the external space of the 24 buildings as well as analyzes the reason for their unique cultural characteristics from the perspective of social and cultural background.

In Chapter 4, in terms of composition elements, spatial forms and flow lines, the author respectively investigated and analyzed the entrance space, main-square space and subsidiary spaces of the campuses of the only three colleges/universities in Nanjing (including National Central University, University of Nanking and Ginling College) in the period of the ROC, with a view to ascertaining the features of spatial composition of university campuses.

In Chapter 5, the Sun Yat-sen Mausoleum which is the most representative building dedicated to the memory of Dr. Sun Yat-sen, is the research target of this thesis. Based on the historical background of the Republic of China, historical textual research and on-the-spot investigation were carried out into the spatial composition of the SYM. The entire mausoleum is divided into 14 subspaces, which are investigated and analyzed in terms of three aspects, including “compositional elements,” “compositional forms,” and “vertical composition.” Finally, the characteristics of spatial composition are analyzed as a whole.

Based on the investigation and analysis of the external space of the public buildings in the aforesaid chapters, Chapter 6 makes a general assessment, statement and conclusion about the compositional characteristics of external space of public buildings of the ROC in Nanjing, and carries out due discussions on the future research subjects.

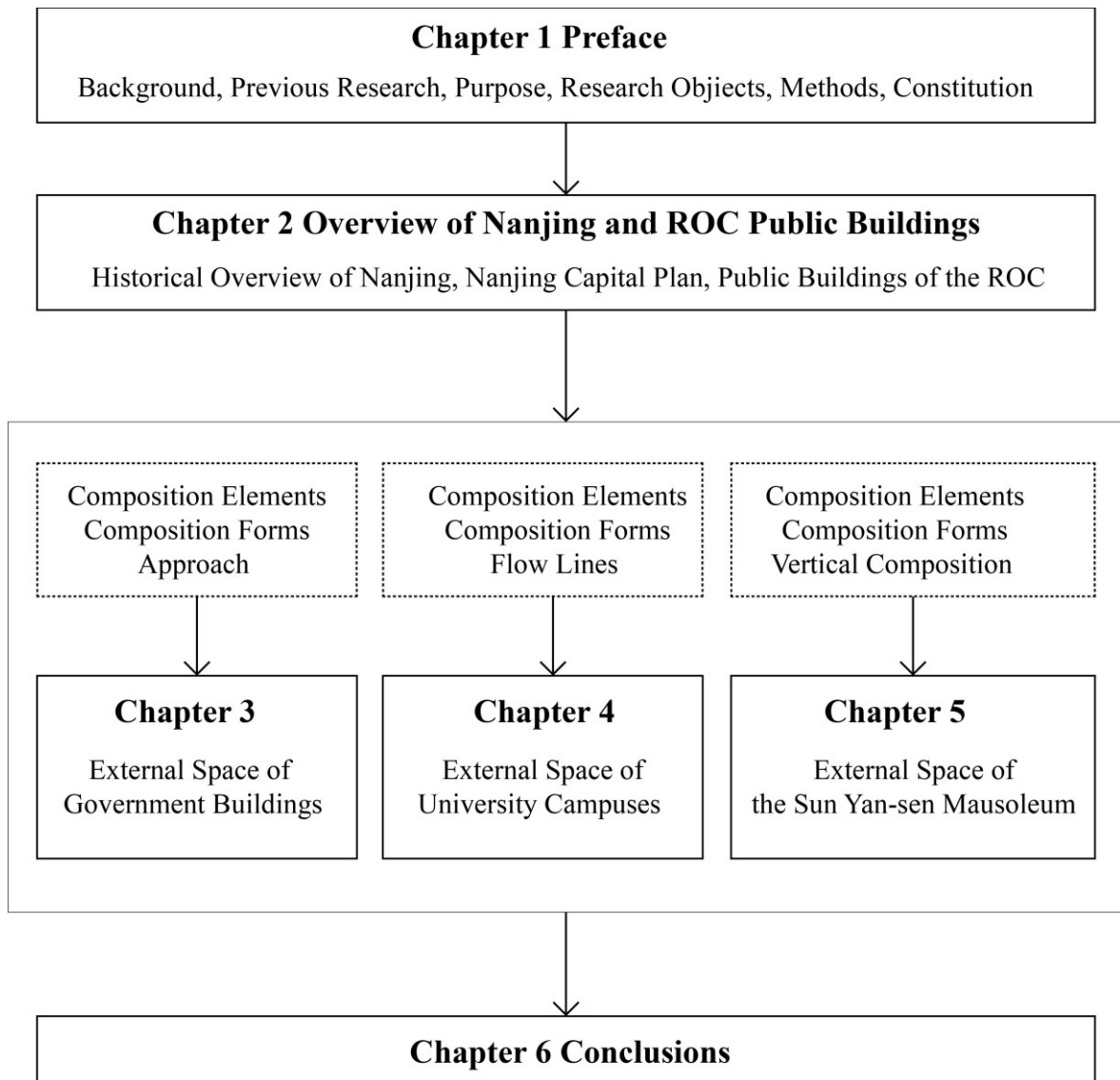


Figure-1-3 Research Constitution of this Thesis

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Chapter 2 Overview of Nanjing and ROC Public Buildings

2.1 Introduction

Study on the cultural characteristics of a city calls for understanding of its history first. Similarly, study on the garden culture of Nanjing also calls for the historical development of Nanjing. The cultural value of the culture shall be made definite first to protect it. As far as the categories are concerned, there is a complete range of ROC buildings in Nanjing. As for the tastes, most of them belong to state projects, and represent the highest design and construction levels then.¹⁾ On the other hand, the encounters between Chinese and Western garden cultures at the end of Qing Dynasty and beginning of the ROC brought about corresponding reforms in conventional Chinese gardens, and many new works came into being as a result.²⁾ The changes and development produced during initial conflicts between conventional Chinese gardens and Western gardens implies direction, most important of which is cultural continuity, while the essence of changes in the forms of gardens is a cultural transformation. The in-depth careful study on the transformation period of garden culture is beneficial for examining the original looks of the history, and exploring the construction direction of garden landscape. Thus as a unique garden form, the courtyards of public buildings (external space of public buildings) on the development of traditional gardens as well as absorption of Western gardens are the conditions and the way what to be analyzed and explored in the thesis.

2.2 Historical Overview of Nanjing

Nanjing (南京) (Ning in short (寧), also known as Jinling (金陵)), is the provincial capital city of Jiangsu Province of the PRC. Nanjing lies on the lower reaches of the Yangtze River, and is about 300km to the estuary of the Yangtze River. It has been an important traffic port linking the central plains and the Yangtze Delta since the old days (Figure-2-1). Nanjing was built over 2,500 years ago, and has served as a capital city for nearly 500 years, and is one of the four ancient capital cities of China. Thus it is reputed to be “ancient capital city of six dynasties” and “capital city of ten dynasties”^①, and has served as the

^① Six dynasties: Eastern Wu; Eastern Jin; Song, Qi, Liang and Chen in the Northern and Southern Dynasties. Ten dynasties: Eastern Wu, Eastern Jin, Song, Qi, Liang, Chen, Southern Tang, Ming, Taiping Heavenly Kingdom and ROC government that established political powers in Nanjing.

political and cultural center in south China. Nanjing boasts profound cultural deposits and rich historical remains, and ranks among the first batch of national renowned historical and cultural cities, and a key scenic tourism city of the country.³⁾



Figure-2-1 Location of Nanjing in China

Qing Dynasty was defeated in the First Opium War, and had to sign “Nanjing Treaty” with England in 1842. Xiaguan was formally established as a business port in 1899, and Nanjing was opened to the Western world since then. Refer to Figure-2-2. The revolution of 1911 turned down the monarchic reign of Qing Dynasty, and the temporary government of the ROC was founded in Nanjing on January 1, 1912, and Sun Yat-sen served as the temporary president and changed Jiangning government to Nanjing government^①. Yuan Shikai moved the capital city of the ROC to Beijing shortly after. The northern expeditionary army of Kuomintang occupied Nanjing in March 1927. Chiang Kai-shek established national government in Nanjing, and fix it as the capital city. The decade from 1927 to 1937 was called “decade of Nanjing”, during which large-scaled construction of the capital city was carried out in Nanjing, which laid down a desirable foundation for modern urban development of the city. The

^① Sun Yat-sen thought Nanjing was the city most suitable for establishing capital city, and he once made the following remarks on Nanjing in “State Construction Strategy” as follows: “Nanjing served as an ancient capital city of China before Beijing, and it lies in a nice areas integrating natural landscapes such as high mountains, deep waters and plains, and it is really hard to find such an ideal place among the large metropolis in the world. Moreover, it lies in the center of the richest areas on both banks of the lower reaches of the Yangtze River, which will bring about indefinite development to Nanjing.”

urban populations of Nanjing grew over 1 million in 1937, and Nanjing one of the six large cities in China then^①.⁴⁾ The war between China and Japan broke out in an all-round way in July 1937. Japan announced its surrender in August 1945. Then the national government moved from Chongqing back to Nanjing in May 1946. CPC occupied Nanjing in April 1949, and Nanjing became a city directly under central municipality of the central people's government after the founding of the PRC.

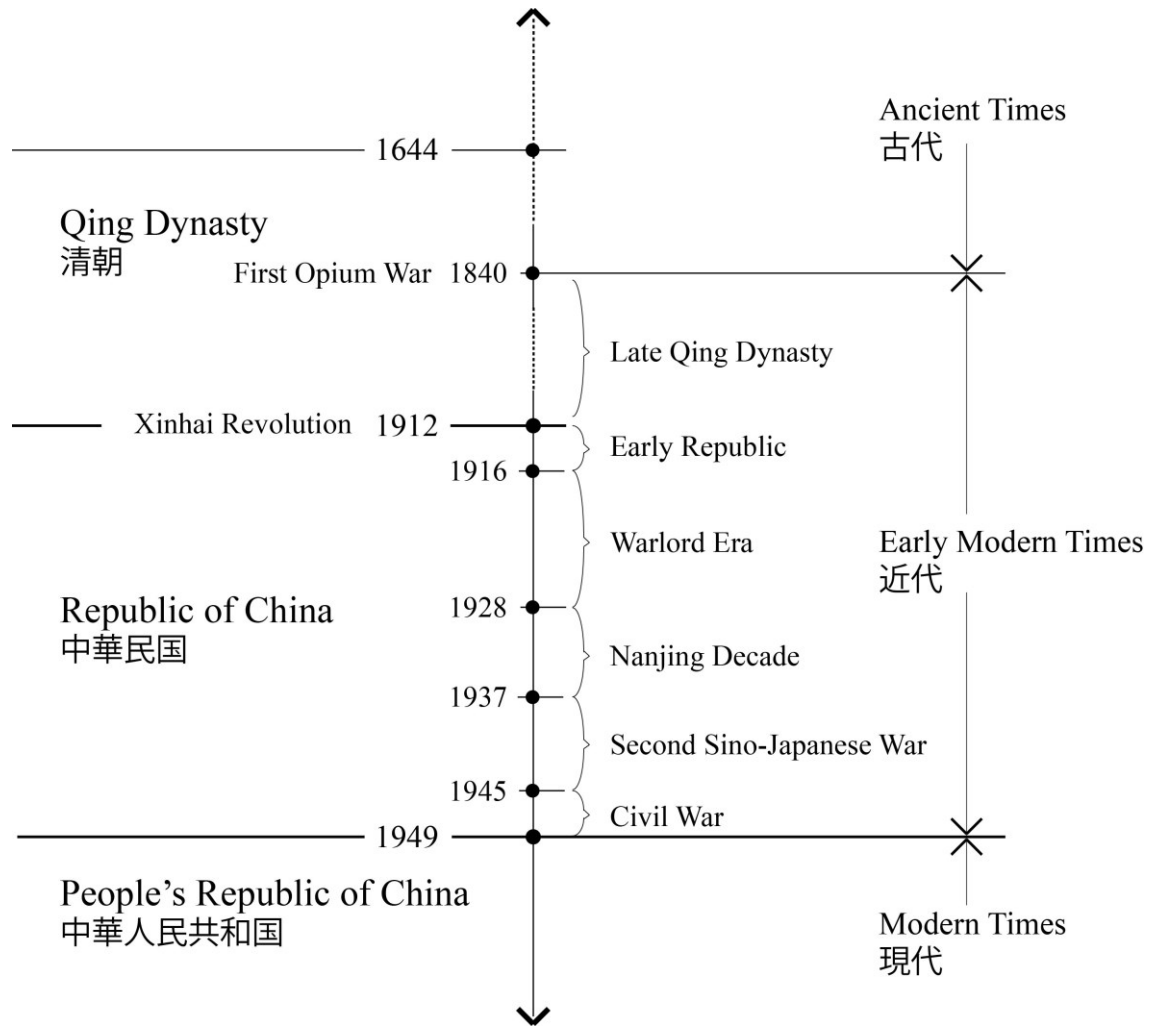


Figure-2-2 Historical Background of the ROC

The history shows that the success of Nanjing mainly depended on the establishment of a capital there, or rather, its political position. The four most important periods in the ancient and modern histories of urban planning in Nanjing were: Six Dynasties, Southern Tang Dynasty, Ming Dynasty and the

^① The large six cities then are Shanghai (上海), Beijing (北京), Tianjin (天津), Guangzhou (廣州), Nanjing (南京) and Hankou (武漢).

ROC, which were also the most splendid periods in the history of Nanjing. As the capital of the four periods, Nanjing had its city layout, street and alley arrangement and historical sites exert great impact on the following periods.

As an ancient capital of six dynasties, metropolis of ten dynasties and a national renowned historical and cultural city, Nanjing has formed three cultures rich in individual characteristics: culture of six dynasties, culture of Ming Dynasty and culture of ROC during nearly 2,500-year historical process of urban development. From the perspective of material aspect, the three cultures in the history of Nanjing have their own advantages: The culture of six dynasties is marvelous in the mausoleum and stone inscriptions scattered in the fields, the culture of Ming Dynasty is grand mainly due to the city wall surrounding Nanjing (including Ming Xiaoling Mausoleum), while the culture of ROC is famous mainly for various buildings concentrated inside the city (Figure-2-3).^{5) 6)}

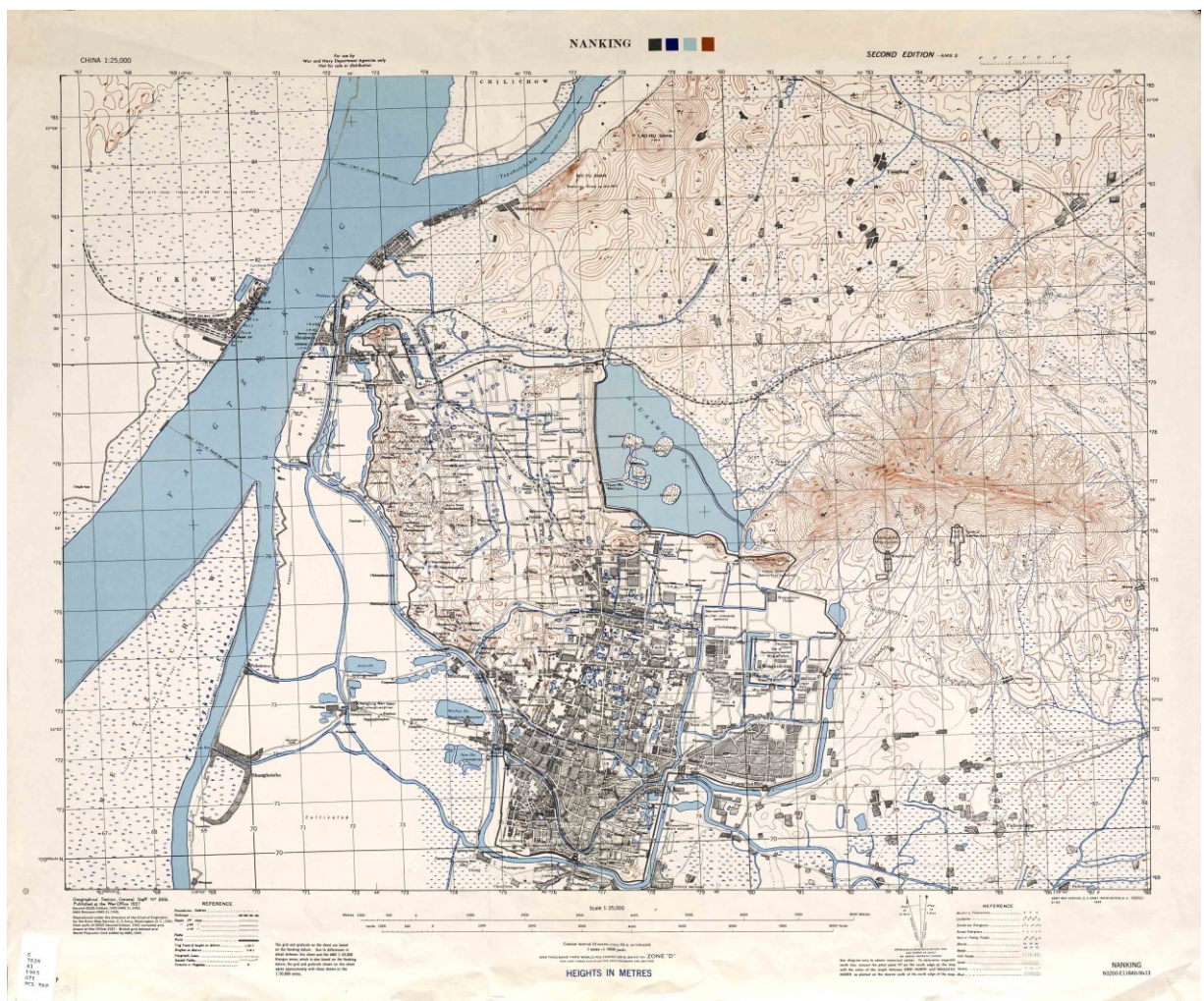


Figure-2-3 Map of Nanjing in 1940s

2.3 Nanjing Capital Plan

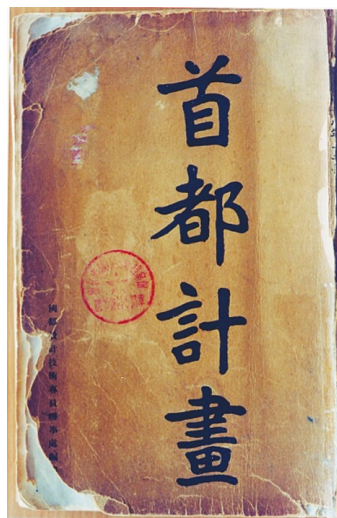


Figure-2-4 The Cover of “*Capital Plan*”(1929)

“*Capital Plan*” (首都計畫) is an urban planning document issued for modern transformation of Nanjing City after the ROC government established Nanjing as the capital city in April 1927 (Figure-2-4). “*Adjustment Plan to the Capital Plan*” was formulated between 1930 and 1937 along with the adjustment of the original plan, and “*Urban Planning Outline of Nanjing City*” was formulated in 1947. The advisors thereof were Henry K. Murphy and Ernest P. Goodrich from America, and they mainly took charge of planning. The contents of “*Capital Plan*” included population forecast, urban functional division (central political zone, administrative zone, residential zone, cultural and educational zone, industrial zone and commercial zone), road system planning and municipal projects etc..⁷⁾ Over a decade of construction activities were launched since the promulgation of “*Capital Plan*”. Many contents of the plan were not fully implemented due to various reasons such as war. However, the urban pattern, functional division, road system and a batch of public buildings etc. of the modern Nanjing are laid down by such planning (Figure-2-5).

“*Capital Plan*” made definite provisions on the architectural forms, and called for “instinct forms of China”, which especially emphasized that “Government offices and public buildings shall especially adopt such forms if possible”.⁷⁾ It put forth that the macro plan should make reference to Europe and America, while the micro architectural forms should adopt the traditional Chinese buildings, which was a pioneering conception in the 1920s. It not only influenced a batch of buildings built according to “*Capital Plan*” in Nanjing, for

example, Sun Yat-sen's Mausoleum and Central Hospital etc., but also influenced the planning and design of the governments and public buildings of any cities thereafter. For example, municipal government building of Shanghai and Wuhan University etc..⁸⁾ The urban layout "is evenly carried out to the four sides like a concentric circle" to avoid "a narrow and long form" and "excessive prosperity in a part, and excessive disorder in another part".⁷⁾ The American rectangular road network was taken as the ideal program of road planning for the road system, and the new planning concepts and contents such as boulevard, urban ring way, and circular radiation etc.. The first batch of projects implemented under the planning were named "Zhongshan", for example, Zhongshan pier, Zhongshan Road, Zhongshan Bridge and Zhongshan Gate etc.. It can be seen that boulevard represented by Zhongshan Avenue and the modern buildings integrating Chinese and Western styles were the achievements obtained through taking "Capital Plan" as the blueprint.⁹⁾

Evaluations: Thus it can be said that "Capital Plan" is the first foresighted and systematic urban planning in modern China,¹⁰⁾ and has played a decisive role in the urban pattern and spatial layout of Nanjing. Undoubtedly, it is a milestone in modern technological history of China, and it has made critical reference to European and American modes in concepts of urban planning and planning system etc.. And it has carried out imitation and innovation in a certain sense in selection of Chinese and Western, ancient and present styles. Thus its success and failure can still serve as reference for today.¹¹⁾ What is more valuable is that the ROC buildings designed and built by the first batch of architects that returned from overseas studies in Europe and America according to such plan took on pluralistic styles and unique models, thus leaving a rare record in Chinese and even the world architectural history.

國 都 界 綫 圖

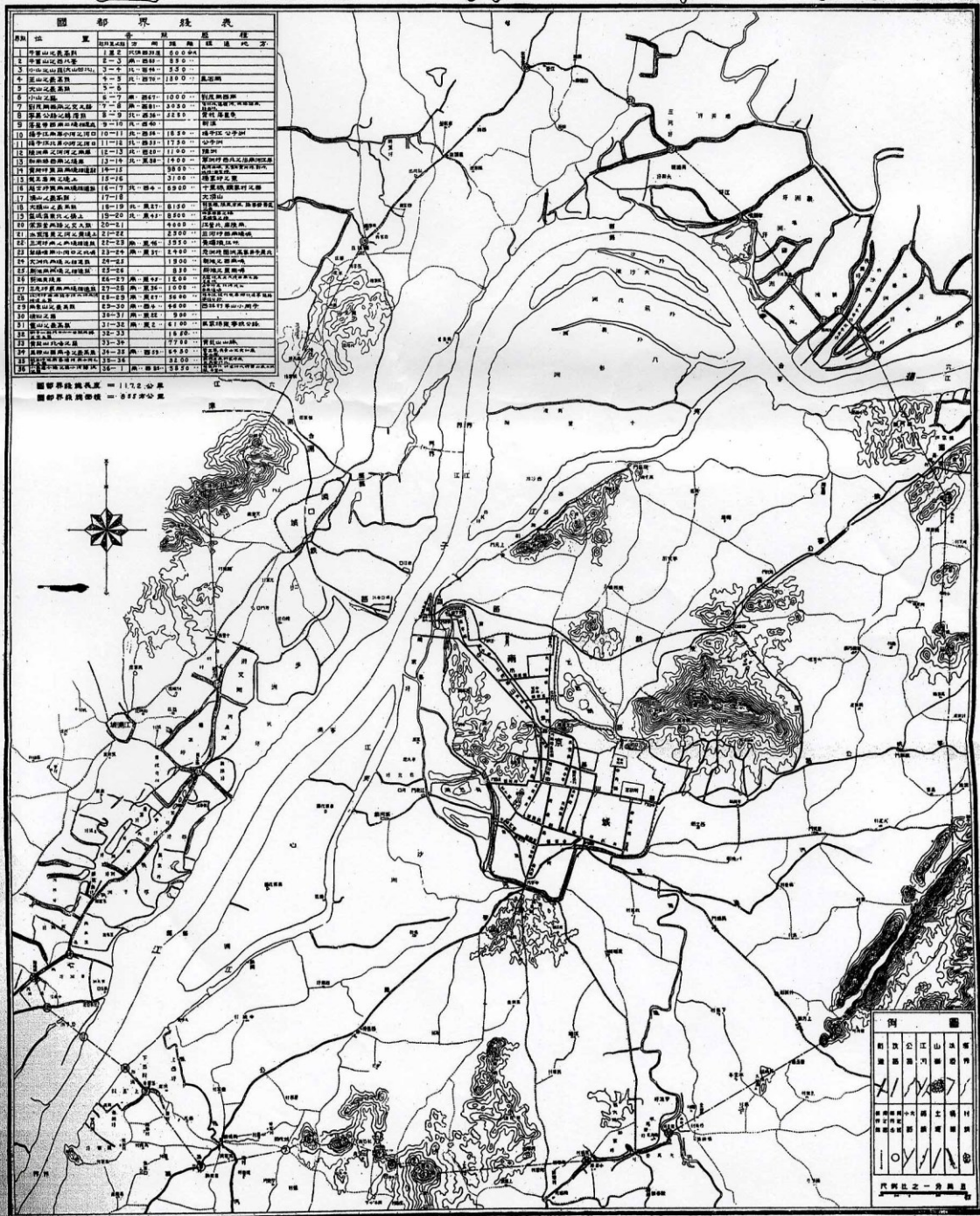


Figure-2-5 The Boundaries of the Capital

2.4 Profile of ROC Public Buildings in Nanjing

ROC buildings refer to the buildings built during the ROC with a certain historical and cultural value. The ROC buildings in Nanjing are an important part of the modern buildings (1840-1949) of China, and were in the transitional period that linking the past and present, integrating Chinese and Western styles, and alternating the new and old times in the architectural history of China. Its development process can be divided into five phases such as formation(1912-1919), transformation(1919-1927), climax(1927-1937), stagnation(1937-1945) and restoration(1945-1949), and underwent the development orbit from imitation (or indiscriminately imitation) to making the foreign concepts serve China (or integration and innovation).^{12) 13)}

2.4.1 Historical Position

(1) As the urban planning and municipal construction for a national capital city at the beginning of the previous century, the important position it enjoyed and the legacies it left over to the world were incomparable in other national renowned historical cities. The national government established the capital in Nanjing in 1927, and Nanjing carried out comprehensive planning and concentrated construction as a capital city, which formed the basic pattern of the present Nanjing, and still influences urban life to date.^{6) 9)}

(2) Nanjing witnessed the most concentrated activities of modern Chinese architects. They opened offices themselves, or took charge of planning in government departments, or took teaching jobs in universities, and made valuable contribution to exploration and implementation of modern buildings of Nanjing. LV Yanzhi (1894-1929), YANG Tingbao (1901-1982), ZHAO Shen (1898-1978), TONG Jun (1900-1983) and CHEN Zhi (1902-2001) etc. are the representatives thereof. Most of them once went to Europe, America or Japan for overseas studies, and were the first generation of architects of China.^{10) 14)} They made arduous efforts in updating of creation and design thoughts, planning of different architectural functions, application of various modern materials, exploration of pluralistic architectural styles and preliminary exploration into aesthetic standards and the personal practice in specific construction. Thus they created fruitful achievements, including many works with far-reaching influences.

(3) There was merely 38 years from 1912 to 1949 since the ROC established Nanjing as its capital, and merely 22 years since 1927, including 8 years when

the ROC moved to Chongqing. There are no less than 200 representative buildings in the short two or three decades. There are a complete range of modern buildings in Nanjing, including large-sized administrative office buildings, memorial buildings, commercial buildings, cultural and educational buildings, church buildings, and embassy buildings etc., which enjoy a quite high position in Chinese modern architectural history. Such buildings come in pluralistic styles which integrate Chinese and Western characteristics, and reflect the top architectural level in China then. The whole Nanjing seems to be a grand “architectural historical museum” in modern China, which is deeply imprinted with the vicissitudes of the times.^{15) 16)}

The buildings are the collective reflection of the state, nation and the past of a city. At present, Nanjing has entered into a period of rapid development, and thus many old buildings have stepped off the historical stage due to the increasingly rapid updating paces in the city with their historical value being neglected, and some other historical buildings have lost their original looks. Such ROC buildings are not only the body but the soul of the city; tangible assets and intangible wealth, symbol of times development and evidence of historical changes.

2.4.2 Styles and Characteristics

As the major characteristic of Nanjing culture, the ROC buildings of Nanjing display its technological and artistic value mainly in their architectural styles. There are mainly six styles of public ROC buildings of Nanjing.^{1) 10) 14)}

(1) Buildings of National Style

The buildings of traditional national forms of China are mostly built with wooden structure or brick-wooden structure, the majority of which are one-floored with a few thereof being bi-floored. The palaces and temples are mostly of double eaves, while civil residences are of herringbone roof.¹⁰⁾ The buildings of such style basically followed the old functional layout, technical system and styles in the ROC while maintaining the conventional characteristics and countryside features such as adaption to local conditions and making use of materials according to their characteristics. Qixia Temple is the most representative one thereof. Such type of architectural style is deemed to be excessively conservative and unable to be adapted to new functional requirements, thus there are few such constructions after the ROC.

(2) Buildings of Western Classical Style

The buildings of Western classical styles mainly refer to classical buildings

that rose in France in the later period of the 17th century. The characteristics thereof are foundations structured with classical pillars, highlighted axis, emphasis on proportion and symmetry, and pursuit of principal and subordinate relations. Buildings of such style are mainly applied for palace buildings, memorial buildings and large-size public buildings.^{10) 17)} The classical buildings center on France, and were first spread to other European countries, and then influenced other regions in the world. Buildings of such style appeared in the schools in Nanjing at the beginning of the 20th century. For example, the library, auditorium, stadium, science building and biological building etc. of National Central University, which are of quite strict models, well-balanced proportions and exquisite decoration in details, therefore they are the most authentic Western classical buildings in Nanjing.

(3) Combined Chinese and Western Style

Buildings of such style are an attempt made by the Chinese and Western architects to integrate the traditional Chinese architectural models and Western modern construction technology, and began to appear in Nanjing in the later period of the 19th century. The national government definitely emphasized that the buildings in the capital city Nanjing “should take the instinct Chinese forms, and especially the government offices and public buildings should adopt such form if possible” in the “Capital Plan” in 1929 after establishing Nanjing as the capital city.⁷⁾ As such buildings of “new functions and old forms” can meet the functional needs of modern buildings, and embody the looks of conventional Chinese buildings, they meet the requirements of times and fashions, and thus buildings of such style became fashionable in Nanjing during the ROC.^{1) 5)} For example, the chapel, administration building, science building and west science building etc. of University of Nanking, and the conference building, science building, literary building, library and auditorium etc. of Ginling College, Sun Yat-sen’s mausoleum and various kinds of administrative buildings of the central government etc. adopted such style as well.

(4) New Style of National Buildings

Generally speaking, such buildings adopt the plane combination of modern buildings as the structure, and mostly adopt reinforced concrete flat roofs, or adopt bi-slope roof of modern roof truss. They have concise and symmetrical models, and apply traditional Chinese architectural decorations on the eaves, wall surface, doors, windows, entrance and interiors, which are supplemented with suitable conventional architectural figures. Such buildings give considerations to the needs of Western modern building technology and those of

modern architectural functions while demonstrating Chinese national styles and pursuing harmonious unity among new functions, new technology, new models and national styles.¹⁰⁾ Nanjing took the lead nationwide in exploration of buildings of such style in the 1930s.¹⁾ The representative buildings include the central stadium buildings, Zijinshan Observatory, Central Hospital, bandstand of the Sun Yat-sen mausoleum, building of the Ministry of Foreign Affairs, national grand hall and national art exhibition hall etc..

(5) Modern Style of Buildings

Buildings of such style emphasize architectural styles, and advocate for getting rid of the restrictions by the obsolete architectural styles, and actively adopting new materials and new structure to create new architectural styles with the internationalization features. As buildings of such style are practical, economic and beautiful, and are suitable for application of new materials and structures, they spread throughout the world once they came into being. For example, Capital Hotel, Fuchang Restaurant, Supreme Court of National Government , Executive Yuan and Agency for International Get-Together etc..

2.5 Current Conditions

According to statistical data, there are over 900 important modern buildings with ROC buildings being the main body in Nanjing, 165 of which have been enlisted as protected cultural relics at various levels, including 24 sites in 10 state protected units, 55 sites in 53 provincial protected units, and 112 sites in 102 municipal protected units.¹⁵⁾ And there are about 170 public buildings. Thus Nanjing is unique nationwide in terms of the area or quantity of such buildings. At present, most of the ROC buildings used and managed by many units, departments and individuals have been properly protected. However, some of ROC buildings have been dismantled during urban transformation due to lack of unified administrative management, some have been damaged or destroyed due to improper decoration, while some others have suffered from disorderly construction and random reconstruction.

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**Chapter 3 Composition and Characteristics of External Space of
Government Buildings**
政府建築の外部空間構成及び特徴

3.1 Introduction

In 1899, while the Western architectural style spread into Nanjing, Nanjing Xiaguan was opened as a commercial port. After the revolution of 1911, Sun Yat-sen (Sun Zhongshan) became the provisional president of Nanjing where the ROC-style architecture and gardens were being constructed to form a modern city. In 1927, Chiang Kai-shek began to officially build Nanjing as the capital. This was especially true after the release of the “Capital City Plan” in 1929 when sustained construction activities began and continued for about 10 years. On the other hand, in the late Qing Dynasty, since the Western culture began its widespread influence on China, buildings and their external spaces underwent great changes from the traditional Chinese style in terms of both architecture and gardens. The style changed from that of “simple imitation” to that of a “combination of Chinese and Western styles” that showcased their unique cultural characteristics that were different from both the traditional and the modern styles. Today, the most representative elements of the culture of the ROC are the buildings of the ROC, and the subsidiary gardens of these buildings are the most representative gardens of the culture of the ROC.

Therefore, the period of 1912–1949 can be regarded as an indispensable part of the history of Chinese architecture and landscape architecture for researching the garden history of China. Because most of the existing buildings in the ROC are beyond the service tenure stipulated by Chinese regulations (70 years) and urban construction has resulted in their poor maintenance, many buildings and gardens have been modified or even destroyed completely. For all these reasons, understanding the composition characteristics of the external space of buildings of the ROC would be of great significance for protecting, inheriting, and developing the culture of these historic buildings and gardens of the ROC.

In the past, there have been researches on the Zhongshan Park of the ROC,¹⁾ characteristics of landscape of the ROC,²⁾ architectural history of the ROC,³⁾ architectural art of the ROC,⁴⁾ etc. However, the external space of ancient buildings of the ROC has not been studied previously. In order to save the garden culture of the ROC, the present research focuses on the Nanjing government buildings, the most representative buildings of the ROC, as research objects. The goal is to analyze the composition elements of the external space, including their composition characteristics, so that the unique cultural characteristics that are based on a combination of Chinese and

Western styles can be clarified and understood.

3.2 Methods

3.2.1 Object Selection

There are about 191 ancient building sites in the ROC that still exist in Nanjing. The architectural styles of these buildings can be divided into five categories s1–s5 (Table-3-1).⁵⁾ In this chapter, the research objects all belong to main buildings (office buildings) with an exterior space of political and military buildings of the ancient Nanjing central government. These buildings are at the highest political level with maximum level of construction cost, which reflects the highest level of design and construction. The Nanjing national government had about 30 major central-level governmental authorities, of which six office sites were constructed during the transitional period between the Ming Dynasty and the Qing Dynasty and hence they were excluded from this study (Figure-3-1 and Figure-3-2). The final number of research objects was identified at 24. Refer to details in Figure-3-1 and Table-3-1. The partial pictures of 24 buildings refer to Figure-3-4 ~ Figure-3-17.

3.2.2 Investigation Method

Field surveys and measurements were carried out respectively in September 2010 and March 2011 to study the plan layout and facade patterns of the existing buildings and their external space, especially the plan and three-dimensional composition elements, spatial composition forms, and approach line features. Related information was also collected from available publications and electronic data by consulting the Nanjing Library, Nanjing Urban Construction Archives, and other units, which were used to verify the initial shape of each research object.

3.2.3 Analysis Method

First, according to the survey results of literature and field investigation data, the construction profiles and composition elements of the external space of the 24 sites were sorted and analyzed, and the original arrangement of the morphological sites was sketched as graphics. Second, based on previously

obtained survey data and information obtained from the graphics, the composition elements, patterns, and approach features of the external space were analyzed and investigated by performing a statistical analysis and a case study to finally summarize the typical characteristics and configurations of the external space of the Nanjing government buildings of the ROC.

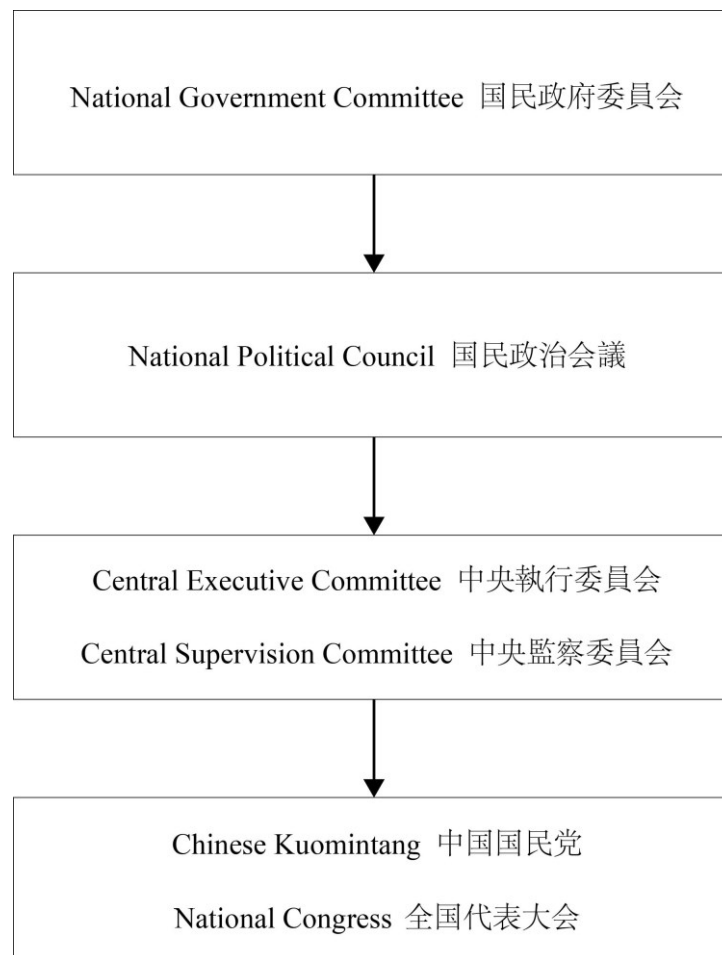


Figure-3-1 Highest Authorities of the ROC

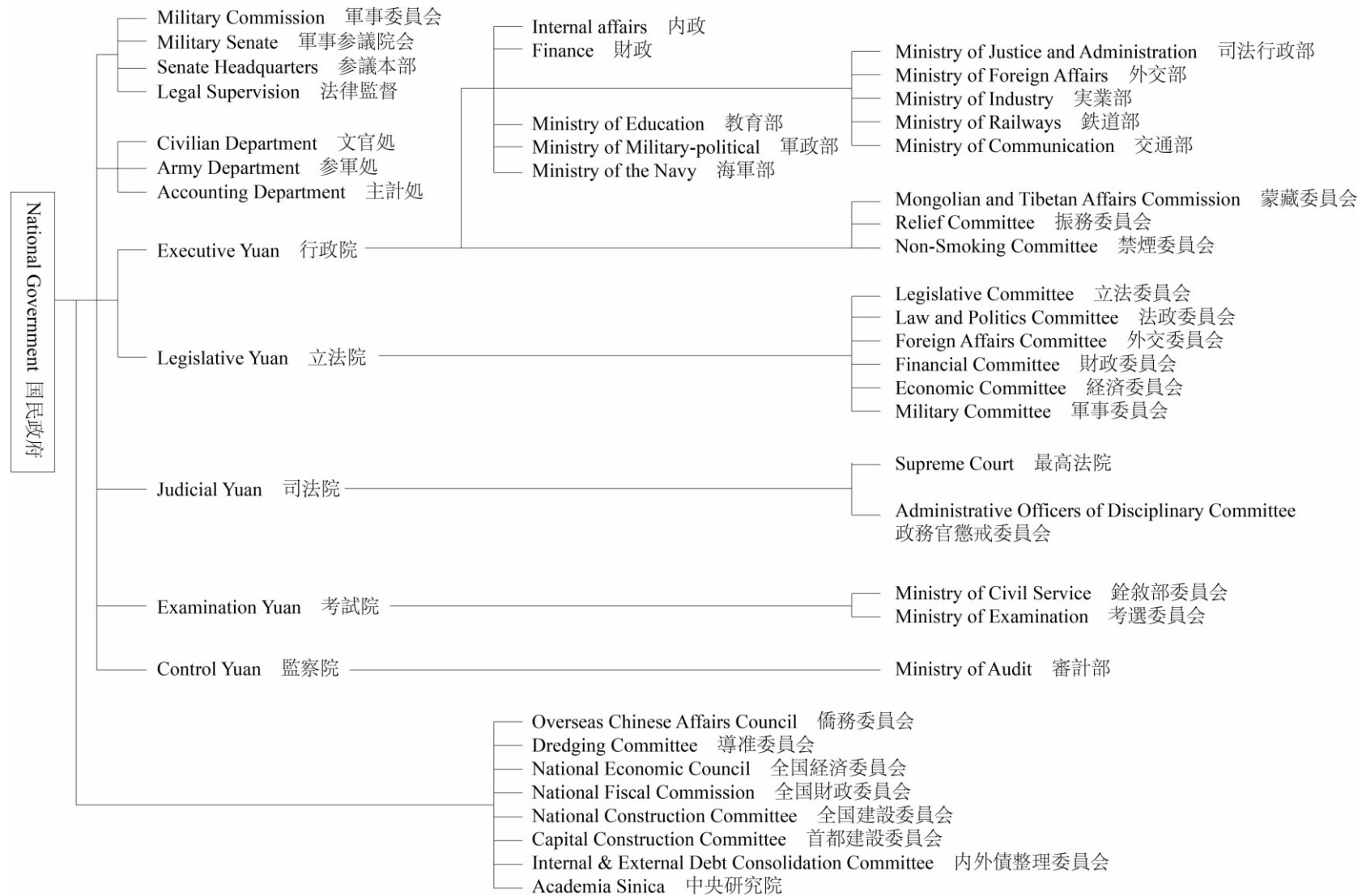


Figure-3-2 Agencies and Organizations of the National Government

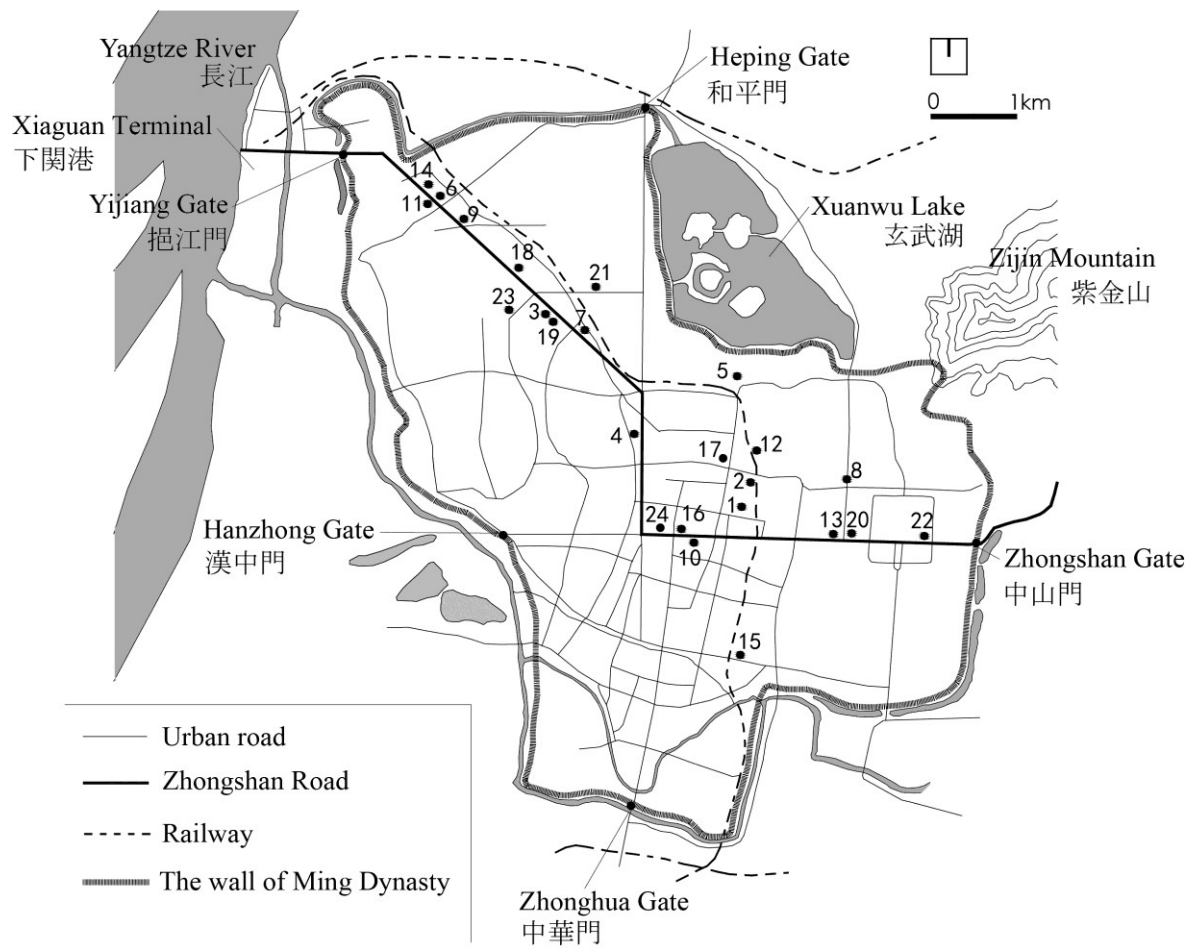


Figure-3-3 Distribution of 24 Government Buildings in Nanjing



Figure-3-4 The Gate of NO.1



Figure-3-5 The Office Building of NO.1



Figure-3-6 The Main Office Building and Scenery of NO.2



Figure-3-7 The Gate of NO.4

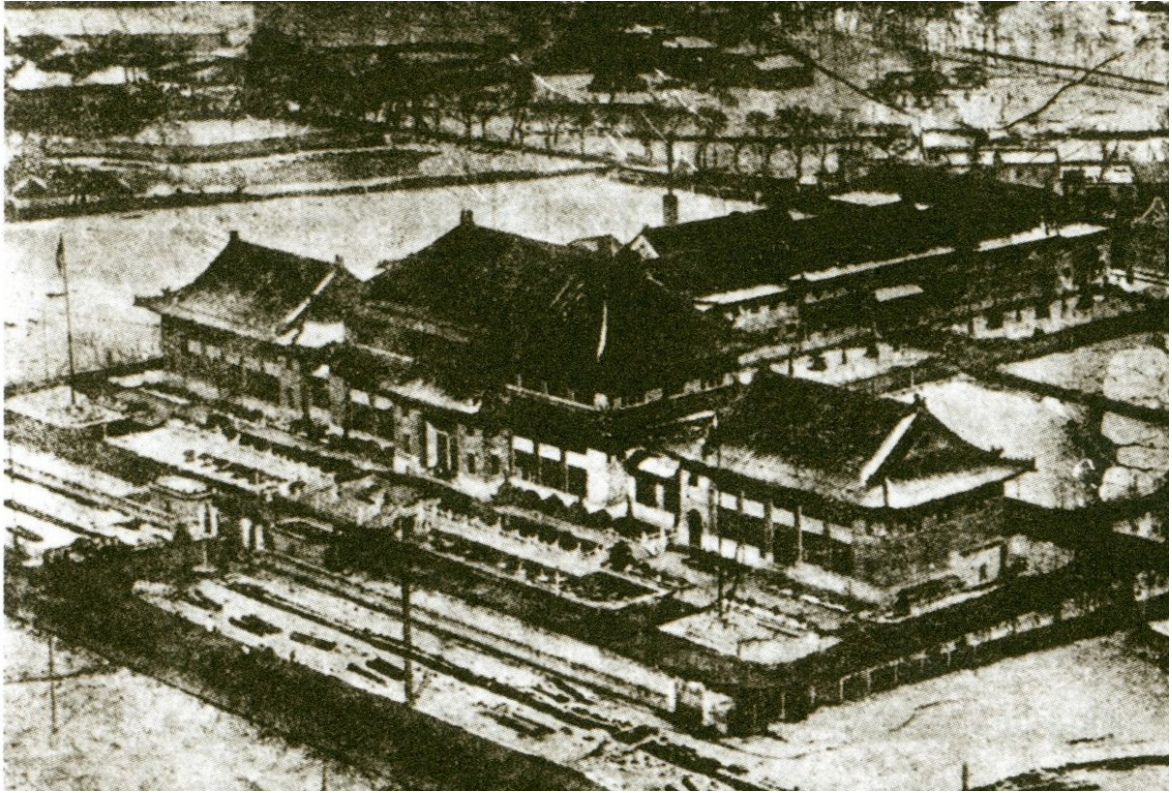


Figure-3-8 The Bird's-eye View of NO.6



Figure-3-9 The Office Building of NO.7



Figure-3-10 The Office Building of NO.8



Figure-3-11 The Office Building of NO.18

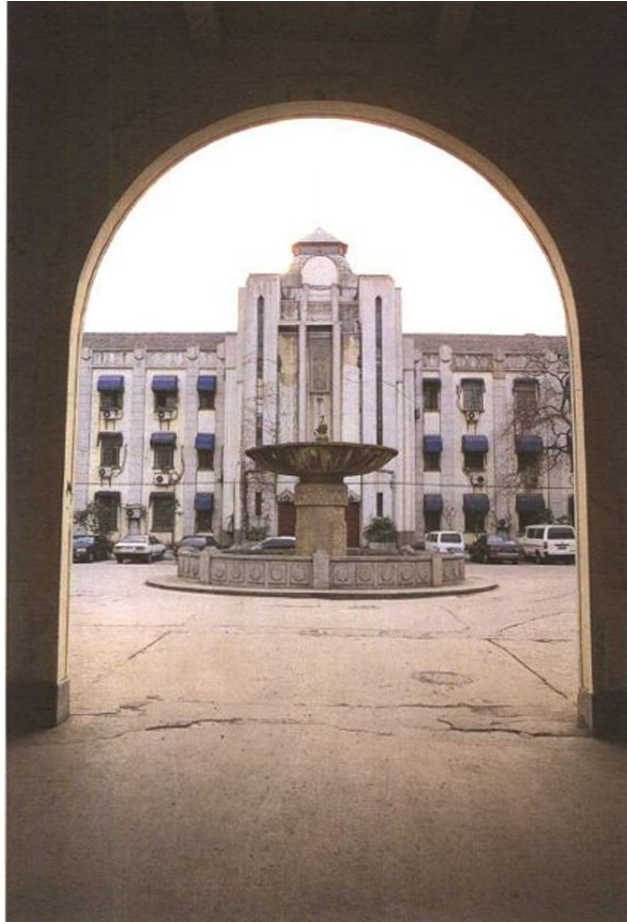


Figure-3-12 The Scenery from the Gate of NO.19



Figure-3-13 The Gate and the Main Office Building of NO.20



Figure-3-14 The Office Building of NO.21



Figure-3-15 The Gate of NO.22



Figure-3-16 The Office Building and the Front Garden of NO.22



Figure-3-17 The Office Building of NO.24

**Table-3-1 Name, Year of Construction, Number of Floors,
Designer and Style of 24 Buildings**

NO.	Name	漢字	Year	Floors	Designers		Style
					Name	Place of Education	
1	Presidential palace	大統領官邸	1934~1935	6	Binglie YU 虞炳烈	France	S4
2	Executive Yuan	行政院	1933~1934	2	Shen ZHAO 趙深	USA	S5
3	Legislative Yuan & Control Yuan	立法院、監察院	1937	2	HUAGAI*	USA	S3
4	Judicial Yuan	司法院	1935	3	unknown.		S2
5	Examination Yuan	考試院	1933	2	Yujun LU 盧毓駿	France	S3
6	Ministry of Railways	鐵道部	1929~1930	3	Wenzhao FAN 范文照	USA	S3
7	Ministry of Foreign Affairs	外交部	1934~1935	4	HUAGAI	USA	S4
8	Ministry of National Defense	國防部	1928~1933	2	Jinnong ZHANG 張謹農		S2
9	Ministry of Military-political	軍政部	1928	2	unknown		S2
10	Ministry of Finance	財政部	unknown	2	unknown		S2
11	Ministry of Communication	交通部	1930~1934	3	A. J. Yaron	Russia	S3
12	Ministry of Water Resources	水利部	unknown	2	unknown		S5
13	Ministry of Public Health	衛生部	1932~1933	3	Wenzhao FAN 范文照	USA	S4
14	Ministry of Provisions	食糧部	1936	3	HUAGAI	USA	S3
15	Ministry of Audit	審計部	1937	4	HUAGAI	USA	S4
16	Ministry of Economy	經濟部	1931~1937	3	unknown		S5
17	Ministry of Education	教育部	1920	2	unknown		S5
18	Resources Committee	資源委員會	1947	2	Tingbao YANG 楊廷寶	USA	S5
19	Supreme Court	最高裁判所	1932~1933	3	Yangmo GUO 過養默	USA	S5
20	Lizhi Organization	勵志社總社	1929~1931	3	W. FAN & S. ZHAO	USA	S3
21	Central Party Headquarters	中央黨部	1909~1910	2	Zhixia SUN 孫支夏	Japan	S2
22	Central Supervision Committee	中央監察委員會	1936~1937	2	Tingbao YANG 楊廷寶	USA	S3
23	Board of Boxer Indemnity	中英庚款理事會	1934	2	Tingbao YANG 楊廷寶	USA	S3
24	Central News Agency	中央通訊社	1948~1952	7	Tingbao YANG 楊廷寶	USA	S5
Sum	Architectural style : S1: Buildings with National Style(0) S2: Buildings with Western Classical Style(6) S3: Combined Chinese and Western style(8) S4: New Style of National Buildings(4) S5: Modern Style of Buildings(6) (): Figures in brackets are the number of each style.						
* HUAGAI Architects (華蓋建築士事務所) : Shen ZHAO (趙深), Zhi CHEN (陳植) and Jun TONG (童騫), they all had graduated from University of Pennsylvania.							

3.3 Composition Elements and Characteristics of External Space

The composition elements of the external space were divided into two categories according to their morphology: three-dimensional elements and plane elements (Table-3-2 and Figure-3-18). Three-dimensional elements include mainly walls (w), gates (g), garden buildings (gb), trees (t) and mounds (m); plan elements include pavement (pa), grassland (gr), and pool (po). The access to the external space through gates is divided into two forms: pillar type (g1) and passage type (g2). The former provides an open feeling because of the narrow width of the pillar structure. The wide depth of the latter's wall structure offers a functional limitation of the sight to increase the internal sense of space. The pillar type is also divided into two kinds: with and without beam. The walls are divided into two types—semi-open type (w1) and closed-type (w2)—depending on whether the wall is higher than the eye level. None of the studied walls were of the open type (w0) (Figure-3-19). Three-dimensional elements would compose a space vertically while plan elements would form a space mainly by applying different materials along with decided spatial scale, by which it is found that three-dimensional elements would constitute a stronger sense of a space.

Table-3-2 Composition Elements of External Space

Building	Interior space	
	Exterior space	
Exterior spatial elements	Three-dimensional	w: Wall (w1: semi-open type; w2: closed type) g: Gate (g1: pillar type; g2: passage type) gb: garden building (pavilion; colonnade) t: tree m: mound
	Plane	pa: pavement; parking po: pool gr: grass; soil gr+: open lawn

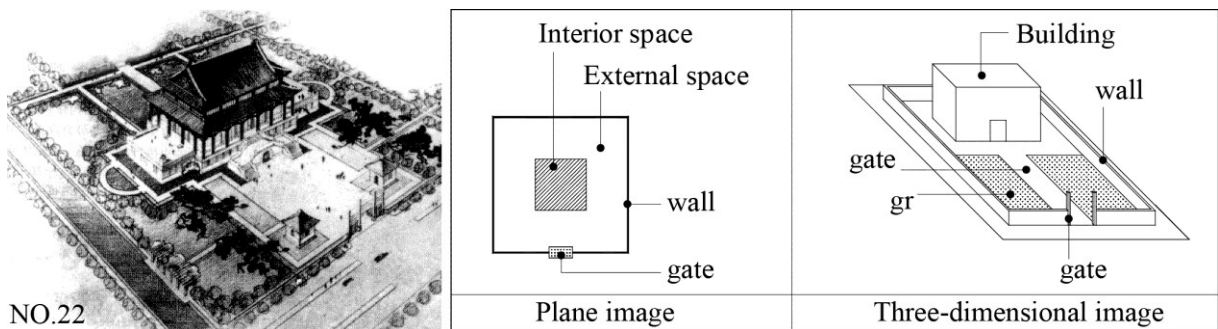
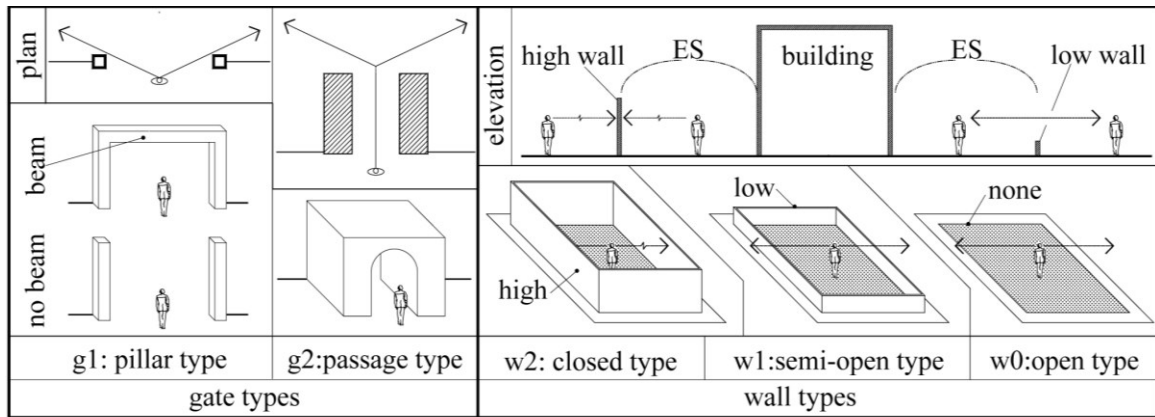


Figure-3-18 The Analysis Diagram of Spatial Composition



Legend ———→ line of sight

Figure-3-19 Gate Types and Wall Types

Refer to Table-3-3 for the statistics of the external space elements of the 24 objects surveyed. On the whole, the composition elements are applied based on a symmetrical pattern in the layout whose style follows the style of the main building. All 24 sites have a main entrance that serves as the major gate and some even have two or three gates. 21 of them contain a pillar type (g1) gate while the other three have passage type (g2) gates. The former ones are widely used since they are concise and the latter ones are impressive because of their unique form, including the gate at research object no.1, whose gate provides the greatest influential effect among all the gates. 24 sites are all provided with walls that are used to define the internal regions (private space) from external areas (public space), of which 10 were constructed with the semi-open type (w1) while 14 were constructed with the closed type (w2). There are only four sites provided with garden buildings (gb). Plants are grown at all sites around the subject buildings in different amounts. Arbor trees are planted based on the axis of symmetry, in pairs or lines, while isolated trees are planted about the central axis. All the external spaces of the 24 studied sites are designed with only flat space, making no use of mound (m) structures in the landscaping.

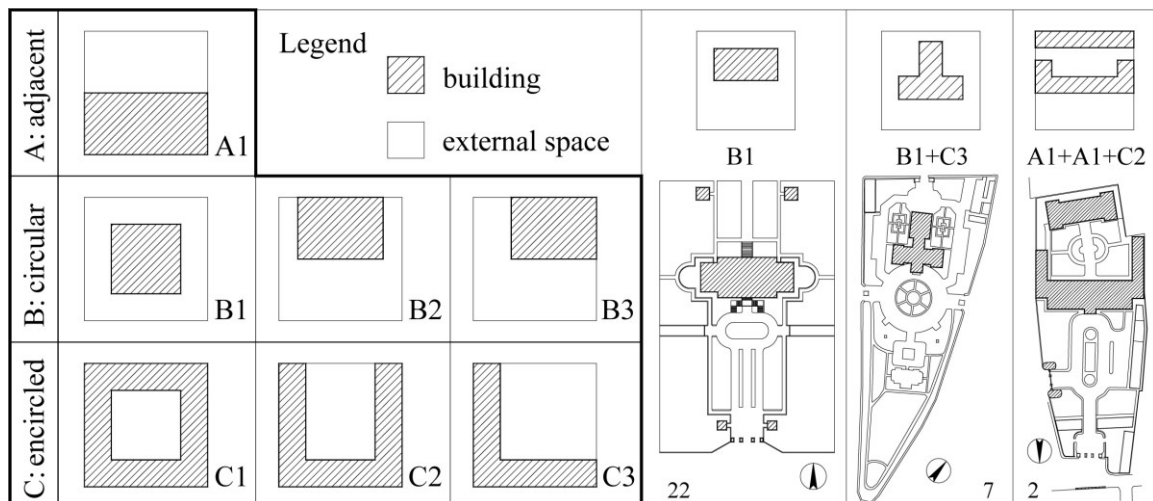
Regarding plane elements, because of the consideration of traffic demands and outdoor activities required by people and vehicles, pavement (pa) is all arranged, mainly in the forms of roads, parking lots, and small squares. Courtyards are paved with grass (gr), mainly open forest and savanna grass. However, there are 10 sites provided with a large area of landscape grass (gr+), such as no.8 and no.21, which combine the open grassland landscape with western-style architectural buildings that complement each other and follow the European garden style. There are only two sites that include landscaping areas with water. No.17 included a square lotus-pond at the vestibular center

at the front of the building, and no.23 had natural water provided originally.

In summary, the composition elements of the external space and the related main buildings of the governmental authorities of the ROC are consistent in their style on the whole, and various elements follow a symmetrical spatial distribution. Regarding their external environment, there is no use of the terrain for landscaping and this leaves flat open space and extensive use of lawns while traditional Chinese garden architecture usage is quite limited. Compared with the traditional courtyard of Chinese governmental office space, the external space clearly features western style brightness and wide openness.

3.4 Composition Forms of External Space

The composition patterns of buildings and their external space can be divided into three categories: adjacent type, circular type, and encircled type.⁶⁾ Refer to Figure-3-20. There is only one adjacent type (A). There are three circular forms (B), specifically the 4-sided circular form (B1), the 3-sided circular form (B2), and the 2-sided circular form (B3). There are also three encircled forms (C), specifically the 4-sided encircled form (C1), the 3-sided encircled form (C2), and the 2-sided encircled form (C3). The above 7 forms from the 3 types can be ordered from the most open to the most closed extent of external space as follows: B(B1→B2→B3)→A(A1)→C(C3→C2→C1).



Remark: This figure was made modeling table 2 of TERAUCHI et al., 2001.

Figure-3-20 Composition Forms of Buildings and their External Space

Based on the above described classification criteria, the composition relationship between the main building and external space of the 24 research objects were analyzed to show that there are 10 sites that consist of only one form, of which 8 are the adjacent form, 2 are the circular form, and there are no of the encircled form. Apart from these, the remaining ones are composed of two or more forms, a form called combined module. The external space of the combined modular form can be divided into three categories: an adjacent module, a circular module, and an encircled module. The adjacent module is related mainly to an adjacent form combined with other composition form(s), while the circular module and encircled module may be deduced by such analogy. Among the research objects, six sites qualify as adjacent modules, 8 sites qualify as circular modules, and there are no encircled modules. Accordingly, the composition relationship between the 24 buildings and their external space is of four types, i.e., ① adjacent type, ② circular type, ③ adjacent modular type, and ④ circular modular type (Table-3-3). The other composition forms that are combined modular forms are mainly created by the morphologic structures of a building itself and its construction combinations, such as the chamber (C1) of no.21, encircled space (C2) of no.24, and circular space (B1) formed by the three buildings of no. 20.

The relationship between buildings and their external space for the 24 research objects do not include the encircled type, but mainly use the adjacent type and circular type, which shows that all buildings are provided with open-style exterior garden space. There are 14 sites total of the adjacent type and adjacent modular type where the external space is arranged mainly as a garden space in front of the building. For those buildings with a composition relationship of the circular type, the related buildings are arranged at a rear location of their construction sites. This indicates that the ROC government authorities mainly applied the layout arrangements into “a front garden with a rear building.” Moreover, there are only 3 sites of buildings provided with internal chambers (C1), i.e., no.11, no.12, and no.21. That is to say that the overall pattern of external space is a single and simple space which plays a vestibular role of buffer space.

In addition to the above analytical results defining four types of composition between buildings and external space, a variety of spatial composition relationships, because of two different encircling forms of walls (w1 and w2) (Figure-3-19), are split apart, such as adjacent semi-open type, adjacent closed type, circular semi-open type, circular closed type and so on. For instance, for no.4 and no.5 the relationship between buildings and their external space are of

the adjacent type, but the walls of no.4 are of the semi-open type while those of no.5 are of the closed type. Thus these two are different in the sense of their external space since the former is provided with a semi-open space while the latter is provided with a closed space. Although the 24 sites researched are set up with fencing walls, 40% of the walls are the semi-open type. Moreover, the government buildings of the ROC were mainly constructed as 2-level or 3-level buildings (Table-3-1) with a height of 10 meters to 15 meters. The ratio of the garden width to the building height was generally greater than 1:1. So, when viewing the buildings from the main entrance, the vertical angle would far less than 45 degrees, providing a generally open sense of the building's garden space.

In summary, the external spaces of the buildings of the ROC are presented in the form of “front garden building.” This provides, whether considered from the spatial pattern or from one’s mind, a significant sense of openness of a spatial nature. Such single, simple, open, and form Westernized external space have integrated the Western style or combined the style of Chinese and Western buildings together to create the gardens’ unique cultural identity for the ROC. When compared with the traditional Chinese official government office style of an introverted, closed, hierarchical courtyard space,⁵⁾ significant changes could be found. These kinds of changes, to some extent, reflect the political concepts of the government of the ROC at that time, i.e., taking an ideological split from the feudal hierarchical class and conservative ideas to establish a new political system, whose open and free democratic concept is fully reflected in the composition relationship between buildings and external space. In addition, it can be found from the architectural style and the overseas background of the designers (Table-3-1) that there is a clear impact on Nanjing’s architecture and the landscape design of its external space by Westernization.

3.5 Approach and Spatial Layout

The gate and building entrance are constructed as the starting point and ending point of the external space approach. Drawing a line linking the gate, the path, and the main entrance of a building forms the major approach of the external space. One gate is provided opposite the building, or at the center or bilaterally in a symmetrical arrangement. The other one is provided at the side(s) of the building, arranged one side or both sides symmetrically. The main entrances of a building are located in the center of the facade of a building (E1)

and at both sides in a symmetrical arrangement (E2), if there are side entrances provided to the facade. Because of that, the gate, roads, and buildings are connected mainly into two sorts of relations, vertical and parallel. The approach of the 24 research objects can be summarized as 5 modes (Figure-3-21) which divide in turn into 3 types: a one-division pattern (L1), a two-division pattern (L2), and a three-division pattern (L3) (Figure-3-21).

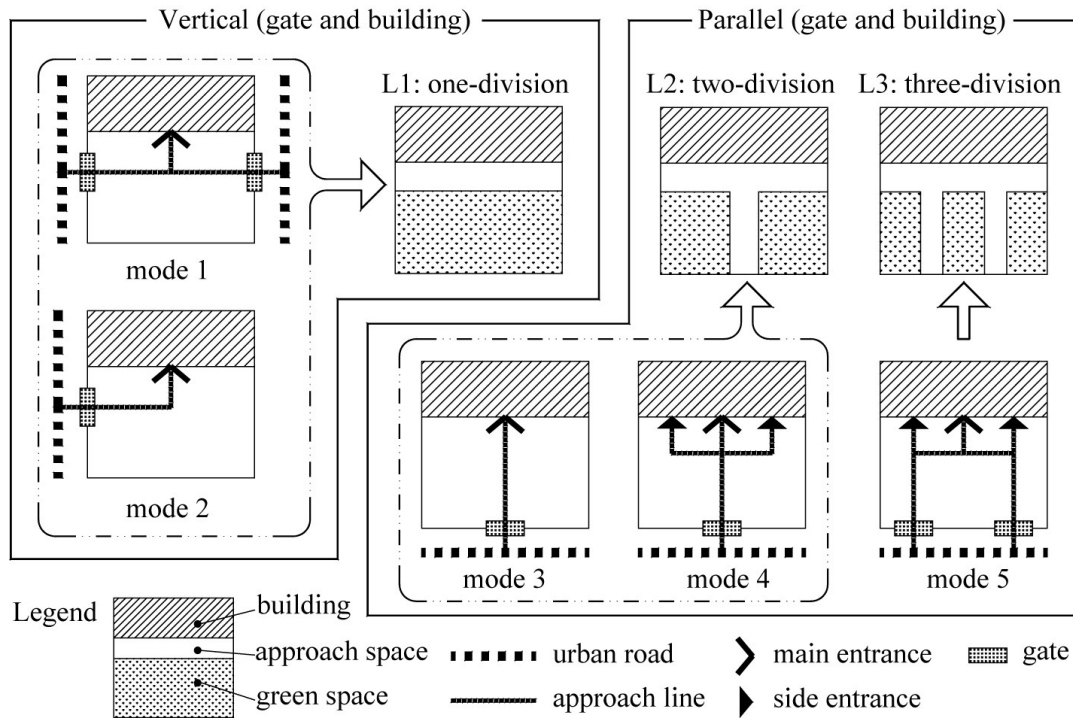


Figure-3-21 Approach Modes and Layout of External Space

For the one-division pattern (L1), the gate is provided at the side of the building, i.e., next to the front of that building, to form approach space while its garden grass is provided as an integral space, such as with no.7 whose vestibular garden space is involved in the one-division pattern. For the two-division pattern (L2), the gate is provided at the axis of the building, exactly corresponding to the main entrance of that building, and the green garden is arranged at both sides of the central axis while other composition elements are arranged in a symmetrical layout to form a unified and rigorous external space pattern, such as with no.22. For the three-division pattern (L3), there is a symmetrical layout with two symmetrical gates opposite the building and two parallel circulation lines dividing the external space into three green spaces of garden. This type is only used in structure no.11 because it has a less convenient degree of transportation than the other two types.

For these 3 types, L1 is present on 6 sites, L2 on 17 sites, and L3 on 1 site (Table-3-3). The layout of the gardens primarily uses the two-division pattern while the one-division pattern is a supplemental arrangement. The composition relationships between the 24 research objects' buildings and external space and their approach forms as well as space layouts are summarized in Figure 5. The composition characteristics of the external space shown are mainly a combination of the four types (①, ②, ③ and ④) with the one-division pattern or the two-division pattern (Table 3). Regarding the 8 sites of adjacent type (①), 2 are the one-division pattern (①-1) and 6 are the two-division pattern (①-2).

Table-3-3 Composition Elements and Compositional Types

NO.	Exterior spatial elements										Composition forms	Entrance	Layout	Composition types		
	Three-dimensional					Plane										
	g	w	gb	t	m	pa	gr	gr+	po							
10	g1	w2		t		pa	gr				A1	E1	L1		① Adjacent type	
13	g1	w1		t		pa	gr	gr+			A1	E1				
1	g2	w2	gb	t		pa	gr				A1	E1				
9	g2	w2		t		pa	gr				A1	E1				
17	g1	w2		t		pa	gr		po		A1	E1		L2		
4	g1	w1		t		pa	gr	gr+			A1	E2				
5	g1	w2		t		pa	gr	gr+			A1	E2				
8	g1	w1		t		pa	gr	gr+			A1	E2				
22	g1	w2	gb	t		pa	gr	gr+			B1	E1	L2		② Circular	
23	g1	w1		t		pa	gr		po		B1	E1				
6	g1	w1		t		pa	gr	gr+			A1+A1	E2	L2		③ Adjacent module	
12	g1	w2		t		pa	gr				A1+C1	E1				
16	g1	w2		t		pa	gr				A1+C2	E1				
3	g1	w1		t		pa	gr				A1+A1+C2	E2				
19	g2	w1		t		pa	gr				A1+A1+C2	E2	E1		④ Circular module	
2	g1	w2	gb	t		pa	gr	gr+			A1+A1+C2					
7	g1	w1	gb	t		pa	gr	gr+			B1+C3	E1	L1			
14	g1	w2		t		pa	gr				B2+B2	E1				
15	g1	w2		t		pa	gr				B2+B2	E1				
18	g1	w2		t		pa	gr				B3+C2	E1	L2			
20	g1	w1		t		pa	gr	gr+			B1+B1	E1				
21	g1	w2		t		pa	gr	gr+			B1+C1	E2	E1			
24	g1	w2		t		pa	gr				B2+C2					
11	g1	w1		t		pa	gr				B1+C1	E2	L3			
Sum	g1(21)、g2(3)、w1(10)、w2(14)、gb(4)、t(24)、m(0); pa(24)、gr(24)、gr+(10)、po(2)										Composition forms: A1(18)、B1(7)、B2(5)、B3(1)、C1(3)、 C2(6)、C3(1); Entrance (building facade) : E1 Only one main- entrance (16)、E2 One main-entrance and two side-entrance(8); Layout type of ES: L1 one-division pattern(6)、L2 two-division pattern(17)、L3 three-division pattern(1); Composition types: Adjacent type(8)、Circular type(2)、Adjacent module(6)、Circular module(8)	④-1 ④-2 ④-3	④ Circular module			
	Legend	() : Figures in brackets are the total number of each of the statistics. building approach space green space														

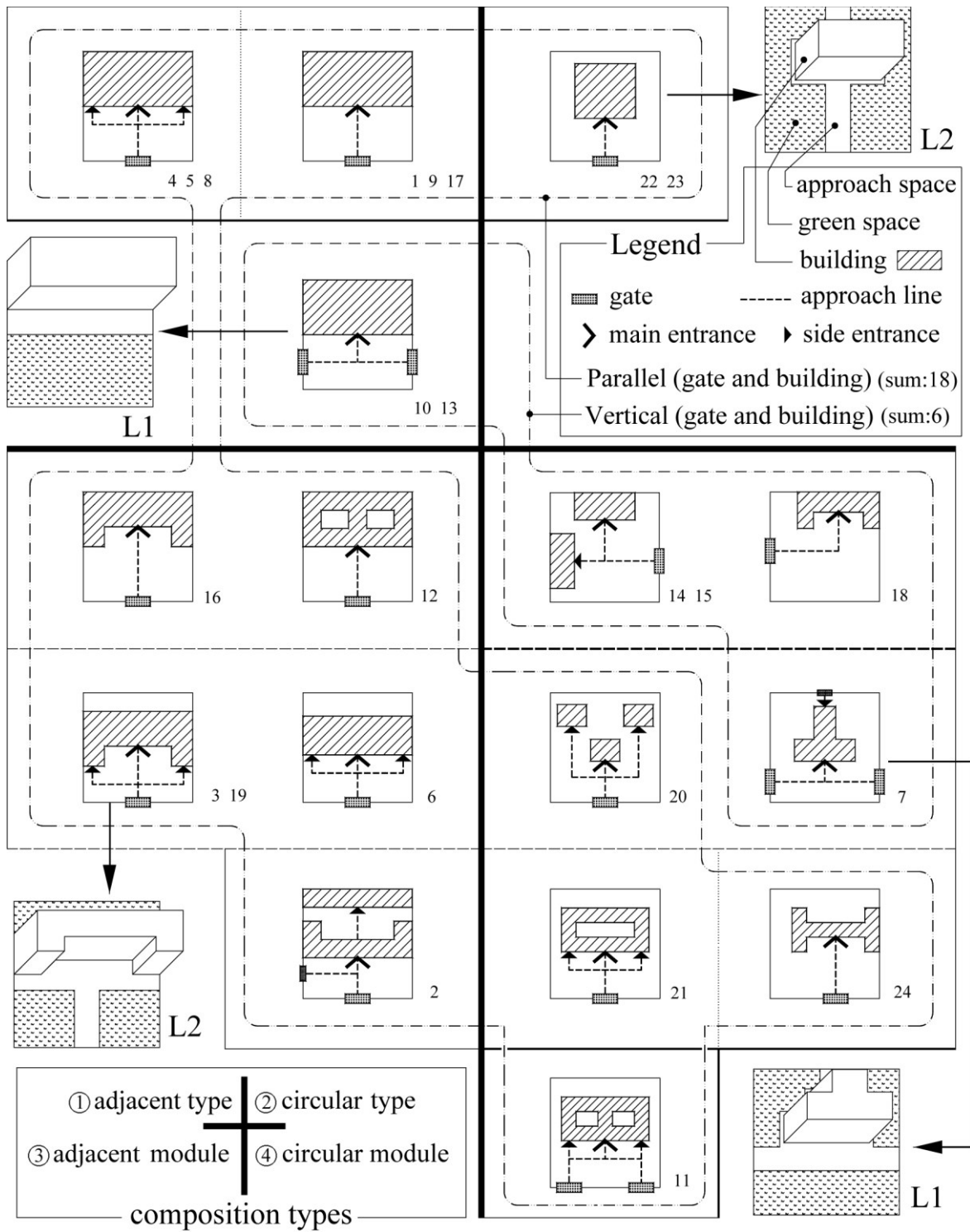


Figure-3-22 Composition Characteristics of 24 Objects

In summary, the main features of the external space approach are presented as linear architecture that is parallel or perpendicular to the building. For the five modes of approach, there are three types of layout for external space. Whether the external space has one-division or two-divisions, the spatial pattern would be strictly symmetrical. This characteristic is consistent with the seriousness of the central government at that time. The geometric symmetrical gardens, reflecting the transition of the Chinese community to “Western civilization” worship, are an ideological embodiment of the rulers.⁴⁾

In addition, the outer approaches of the sites are all presented in a form where the axis of the gate is perpendicular to the urban roads. Because the relationship between the building and the gate involves two orientations, vertical and parallel, the phase position of such a building is not bound to the traditional Chinese governmental office building alignment. Specifically, “facing south,” which is said to be a pattern based on identifying south as the honor side. Instead, the sampled buildings were constructed with the facade of the building parallel to the urban road (18 sites) except for a small number that were built perpendicular to the road (6 sites) (Figure-3-22). Moreover, the layouts of the 15 sites decided by the government authorities were located along Zhongshan Road^① (Figure-3-3). “Zhongshan,” as a symbol of the political propaganda at that time,¹⁾ had a strong symbolic meaning involved in the philosophy of “democratic republic.” Therefore, it has been fully confirmed that the related political demands were reflected to some extent in the form and style of the government buildings of the ROC and their external space.

3.6 Comprehensive Consideration

The place where ancient Chinese officials handled government affairs was called Yashu (衙署) (a government office). Yashu was a major architecture in the

^① Zhongshan, (中山路) is a common name of Chinese roads, usually in honour of Sun Yat-sen, better-known in Chinese as "Sun Zhongshan", who is considered by many to be the "Father of modern China". In Chinese cities, Zhongshan Road is often one of the city's principal roads. As a result, the road is often very long and divided into numbered sections. In some exceptional cases, a "Zhongshan Road" can have other significance. Zhongshan road in Nanjing was a ceremonial avenue built for the purpose of conveying Sun Yat-sen' funeral procession to the Sun Yat-sen Mausoleum outside the city. It connects the Zhongshan port and the Zhongshan Gate. In 1933, the road was separated into North Zhongshan Road, Zhongshan Road and East Zhongshan Road.

city, mostly having uniform decorations on planned lands and adopting a yard-style layout; the architectural scale shall be determined based on the level of Yashu. As for the architectural characteristic, the palace where the emperor handled state affairs and life can be deemed a Yashu of the highest level. Such a building applied a layout that features symmetry along an axis, thus forming a courtyard with areas of space. The central main hall (the principal hall) of Yashu was the main building, placed at the center of the main courtyard, with ceremonial gate and gallery in front of the main hall. The auxiliary building of the main hall was the place where the magistrate handled government affairs. Local Yashu of prefectures and counties had attached arsenal and prison. Yashu had mansions enclosed for the settlement of officials and their families. So far, well-preserved Yashu included that of Huozhou, Shangxi Province and government of Neixiang County, Henan Province. It can be seen from the picture that the most striking feature of a yard-style layout is the focus on space and courtyard, with architecture, wall or gallery surrounding them, thus forming an introversive and enclosed yard. The major component of a yard was the pavement, serving for providing outdoor activity space. There was occasionally a bit of greening, arranged symmetrically on both sides of the axis in the form of flower beds.

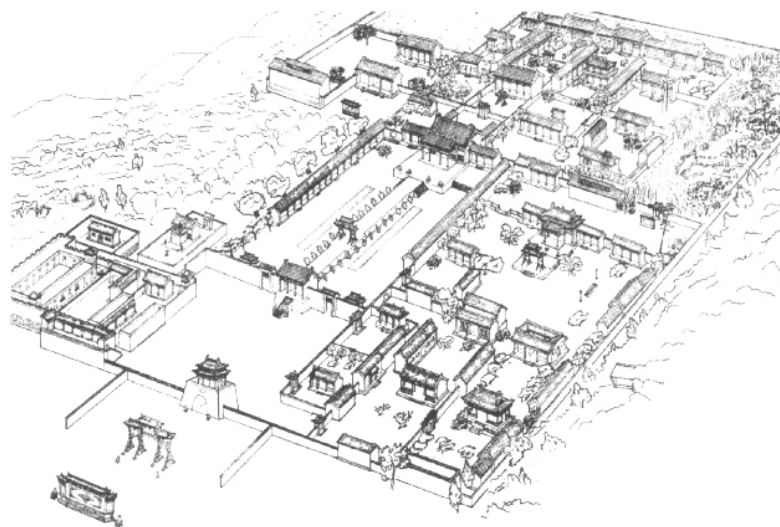


Figure-3-23 Huozhou Yashu in Shangxi Province

The garden of Yashu was an important component of its. The garden greening of Yashu could be dated back to Tang Dynasty, according to documents.⁷⁾ In the Yashu of cities, prefectures and counties, part of the architecture would be allotted for settlement of officials and their families,

equal to mansions. Gardens in Yashu are mostly located in it and behind the mansion, yet neighboring them—that made the garden an interior one attached to Yashu. Therefore, a garden in Yashu functioned as a home garden, with its style and purpose the same as a private garden.

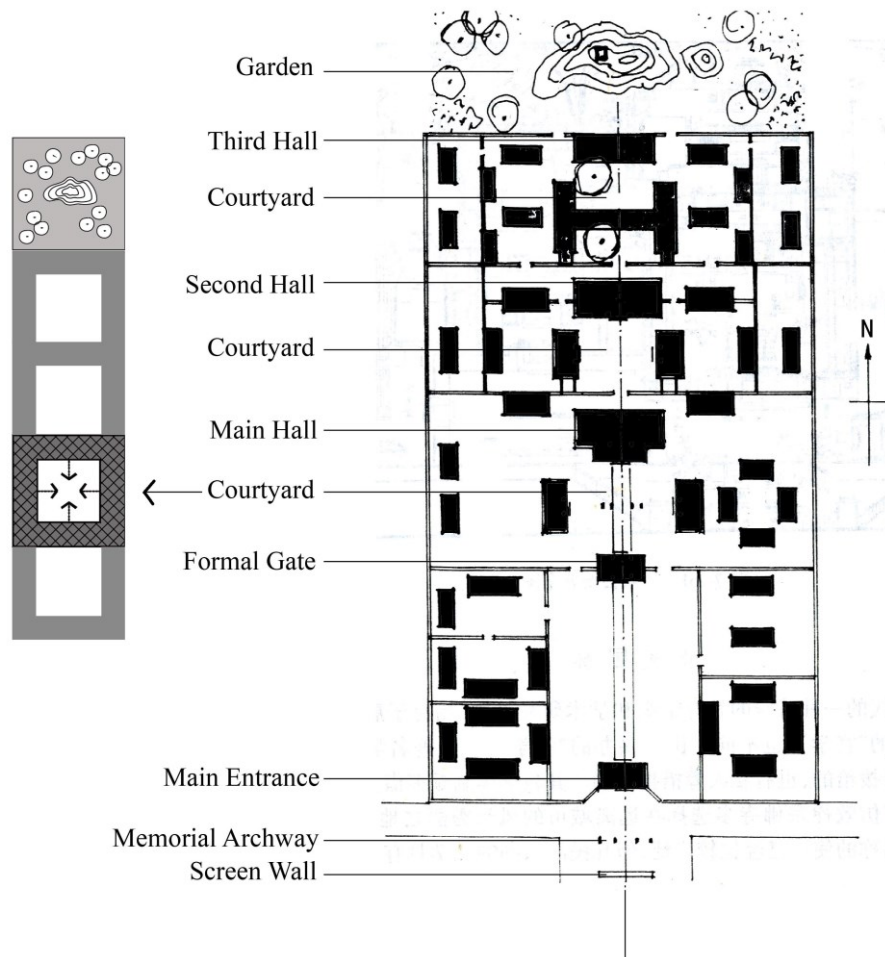


Figure-3-24 Yashu of Neixiang County in Henan Province

It can be concluded from the analysis above that there were no independent yards set in government offices of the ROC; all courtyards at that time were placed on the periphery of the architecture and formed an overall environment together with it. There was no layout in the style of a quadrangle courtyard; instead, the outdoor space was decorated mainly in the form of atria, centered at architecture. As for the landscape architecture style, it was mainly an European style of plane geometrical garden. Based on the principal axis of the architecture, a symmetrical layout of plane geometry style was determined. Lawn landscape and reshaping shrubs were made chief components in gardening. The whole space presented an extroversive and open style.

3.7 Summary

Based on the survey into Nanjing government buildings of the ROC, this chapter has drawn the following conclusions upon the stressed analysis of the composition characteristics of the external space of the buildings.

(1) The overall style of the Nanjing government buildings of the ROC and their external space represent mainly the western style and a combination of Chinese and Western, which served not only as office space for various government authorities, but also provide a physical expression of the political meaning of the democratic republic from the West.

(2) The external space patterns of Nanjing government buildings of the ROC extensively use symmetrical structures, whose composition elements commonly feature the western style lawn and flat terrain as well as present the emergence of semi-open style fencing walls as the most prominent wall style. All these factors reflect the social characteristics of the transition from the old towards the new era—containing unique cultural characteristics based on a combination of Chinese and Western styles.

(3) The composition relationship between Nanjing government buildings of the ROC and their external space are mainly consist of the adjacent type and the circular type, though primarily the former. The external space pattern is arranged mainly as “a front garden with a rear building” to provide an open sense of the external space.

(4) The entrance gate is located to form a strict alignment relationship with the building, thus creating an approach space to divide the external space. There are two main types of external space layout, the one-division pattern and the two-division pattern, and the latter was the primary choice.

This chapter focuses on the analysis of composition elements and the relationship of the external space of Nanjing government buildings in the ROC and summarizes the typical characteristics and layout types of the external space. In the future study, the specific external causes and political nature of these results will be the main research subject.

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**Chapter 4 Spatial Composition and Characteristics of University
Campuses**
大学キャンパスの空間構成及び特徴

4.1 Introduction

On Jan.1, 1912, the ROC was founded. Dr. Sun Yat-sen announced the founding of the Provisional Government of the ROC in Nanjing. From then on, the National Government started the modernized construction of Nanjing as an important city. This construction process lasted from 1927 when Nanjing was designated as the capital of the National Government to 1937 when the construction of Nanjing reached its peak. Thanks to the great attention of the government, many buildings and gardens were built in the meantime.¹⁾ In addition, from the end of the 19th century to the 1920s, the role played by Western missionaries changed from “preacher” to “educator”: they founded missionary schools in China in succession.²⁾ In the period of the ROC, three universities in modern sense were established in Nanjing, including National Central University (NCU) (国立中央大学), University of Nanking (UN) (金陵大学) and Ginling College (GC) (金陵女子大学), namely the three existing universities with the longest history in Nanjing. They appeared not only different from the traditional academy buildings and garden spaces, but also the socialist universities built after 1949 (the year marking the founding of the PRC), so that they assumed unique cultural features in that era (a combination of Chinese and Western elements). Therefore, the former sites of campuses of the above-mentioned three universities in the period of the ROC have been designated as “key units of cultural relics under national protection”, ranking at the highest level among units of cultural relics in China. Since they demonstrate a unique artistic feature of transition in the Chinese architecture and garden history, they are extremely valuable for academic research. Therefore, it is not too much to say that we must study the campus spaces of NCU, UN and GC while studying the composition features of all campus spaces in the period of the ROC in Nanjing and throughout China.

The previous researches into the university campuses in Nanjing in the period of the ROC focused on the history^{3) 4)} ·features and protection^{5) 6)} of campus buildings, the protection of campuses,^{7) ~ 9)} and a review on the general planning.¹⁰⁾ Previous researches illuminated the conscious about the great value beneath, but none of researches into campus spaces went beyond the scope of macroscopic discussion, i.e. no research has been conducted into the spatial composition of campuses in specific forms as well as its features. Therefore, with the period of the ROC as its background, and the only three universities in Nanjing at that time as its research objects, this thesis aims to

ascertain the composition features of the campus spaces of these three colleges/universities. Based on research purpose and due to space limitation, this research did not include buildings dated back to the period before the ROC and their spaces, as well as the spaces of natural forms which were not designed artificially. The authors analyzed and investigated nothing but the spaces that are constituted by buildings in the period of the ROC, including squares, courtyards and roads.

4.2 Methods

4.2.1 Investigation Method

In March and July of 2012, the authors collected and arranged public publications^{3) 5)} and electronic data^{4), 6) ~ 10)} about universities in Nanjing in the period of the ROC (including previous research theses, investigation reports, historical literatures, plane figures and photos) from such institutions/websites as the Library of Nanjing, Jinling Library of Nanjing, Nanjing Urban Construction Archives, the Second Historical Archives of China and websites of electronic journal. And based on the results of the above-mentioned arrangement, the authors made an on-the-spot investigation into these three universities.

4.2.2 Analysis Method


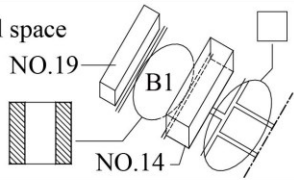
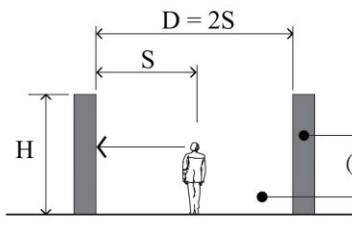
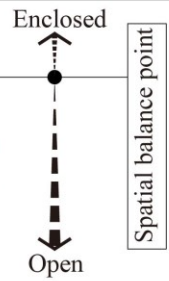
First, based on the social background at that time, the authors sort out the obtained investigation data, assemble the overview of universities and the information about their main buildings into Table-4-2 and Table-4-3.

Next, based on the location attributes and functional features of campus spaces, and the research conducted by Mr. Yang into the campuses of these three universities,⁷⁾ the authors classify campus spaces into: entrance space, main-square space and subsidiary spaces, and confirm the actual forms of sites and draw relevant pictures: Figure-4-5.

Thirdly, based on relevant previous researches of spatial composition, the authors define the analyzed items as: composition elements,¹⁾ spatial forms (configuration^{1) 11)}, scale¹²⁾, and flow lines^{13) 14)} (Please refer to Table-4-1 for relevant explanation), and thereby analyze the spatial composition and features of the campuses of these three colleges/universities respectively.

Finally, based on the similarities and differences of features of spatial composition among the campuses of these three universities, the authors conduct a comprehensive consideration in terms of cultural dimension and social background.

Table-4-1 Analyzed Items of the Campus Spaces

Composition Elements	Building								
	Exterior spatial elements	Three-dimensional	tree	shrubs	shaped-shrubs	GB: colonnade, pavilion HD: steps, ramp			
Plane			pavement	lawn	pool				
Spatial Forms	Configuration	external space of single building				two-sided space		three-sided space	surrounded
		open				semi-open		semi-closed	enclosed
	Scale	 <p>Vertical Image of Space</p> <p>H: object height D: width of the space S: center sight distance</p> <p>Vertical boundaries (buildings/trees/wall/etc.) External space</p>				$r0: S / H < 1/2$ (6) $S / H = 1/2$ $r1: 1/2 < S / H \leq 1$ $r2: 1 < S / H \leq 2$ (5) $r3: 2 < S / H \leq 3$ (6) $r4: 3 < S / H \leq 4$ (4) $r5: S / H > 4$ (5)		 <p>Enclosed</p> <p>Open</p> <p>Spatial balance point</p>	
Flow Lines	Road systems and road grades of campus spaces	Class 1 road		Class 2 road		Class 3 road			
		7m ~ 9m	driveway + sideway	4m ~ 6m	mixed road	1m ~ 3m	walkway		

4.3 Profile of University Campuses

Please refer to Figure-4-1, Table-4-2 and Table-4-3 for the basic profile (geographic location, topographic condition, site scale, number of faculties and number of students, etc.) and details about main buildings. In general, all campuses of these three universities were planned by American designers, while their campus construction was chiefly carried out in the 1920s and the 1930s.

NCU was not only the earliest national comprehensive university in Nanjing, but also the supreme institution of higher learning in China in the period of the ROC. As can be discovered from the plane figure (Figure-4-2) of Nanjing Higher Normal School (NHNS), the campus construction of NCU was developed on the original basis of NHNS. The construction of the teaching area in the south of this university laid the foundation for the overall spatial pattern of its campus (Figure-4-5). Now this site serves as the old campus of Southeast University.

UN was one of the private church universities founded by the Christian Church of USA at the earliest time in China. In 1914, PFHA^① completed the detailed blueprint of the new site of UN (156hm²) (Figure-4-3). However, for historical reasons, only the northernmost building of Undergraduate Department in this blueprint was put into effect. The 11 buildings set up against the slope constituted the spatial pattern of this university in its early period (Figure-4-5). Now this site serves as a part of the old campus of Nanjing University.

^① Perkins, Fellows & Hamilton Architects was founded in Chicago (USA) by Dwight Heald Perkins (1867-1941). After graduating from M.I.T in 1888, D. H. Perkins set up a private architectural firm of his own in Chicago in 1894, and invited a batch of like-minded architects for a joint career. This group of architects jointly constituted the famous “Prairie School” in the American architectural history in the late 1890s.

GC was not only the first college for women in China, but also a private church college. The campus of GC was planned and designed by Henry K. Murphy^①. Please refer to Figure-4-4 for its planning chart. However, as a matter of fact, only the 9 buildings in the central area were put into effect according to the plan. These buildings laid the spatial pattern of GC. Please refer to Figure-4-5. Now this site serves as a part of the old campus of Nanjing Normal University.

At present, the original forms of spatial distribution and main buildings of these three universities are all kept intact. Some buildings still maintain their original functions after due repair and renovation, while some buildings have been directly sealed up for safekeeping as historical relics.

Table-4-2 Profile of Three Campuses

Name of Campus		NCU	NU	GC
Time Conditions	Created	1902	1910	1915
	Analysis	1949	1949	1949
Ownership		State-run	American church	American church
Planner		J. Morrison. Wilson	Perkins, Fellows & Hamilton Architects	Henry K. Murphy
Principal Axis		North-south	North-south	East-west
Site Conditions	Terrain	Flat	Slope, South is lower than North	Ringed on three sides by mountains, Flat center
	Scale (hm ²)	20.3	12.2	13.8
Education Plan	Faculties	7	3	2
	Students	3200	480	400

^① Henry Killiam Murphy (1877-1954), an American architect, was a representative personage of the renaissance of traditional Chinese art of architecture. As a graduate from Yale University in USA, he set up an architectural firm in New York in 1908, once famous for designing colonial buildings. In July 1918, he set up his personal firm in Shanghai. In the meantime, he presided over the design of a series of church colleges/ universities including Tsinghua Imperial College and Yenching University, as well as many other buildings. The understanding of Murphy to Chinese architectural “tradition” contains three elements: (1) the rigorous spatial layout of the Former Palace of the Ming Dynasty and the Qing Dynasty; (2) the architectural forms of palaces and pagodas of the Qing Dynasty; (3) structural or decorative components, e.g. the bracket system, roof and color assortment.

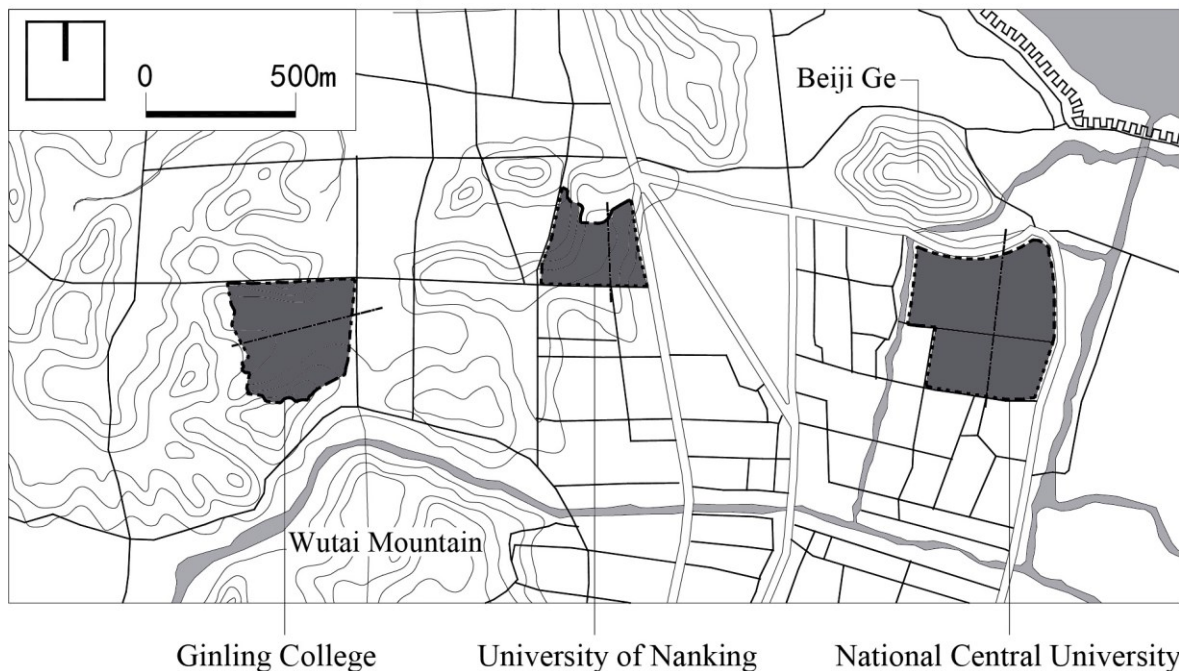
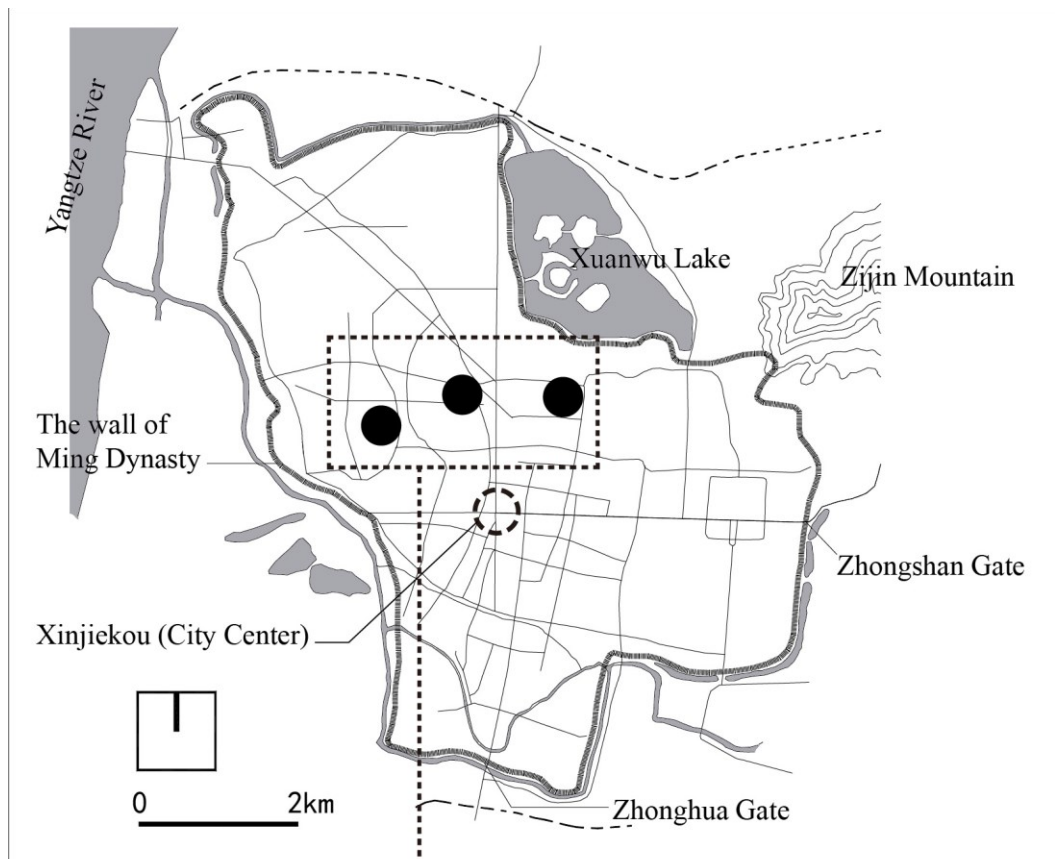


Figure-4-1 Location of Three Campuses in Nanjing

**Table-4-3 The Names, Floors, Years, Designers,
and Constitute Contents of Buildings**

	NO.	Name	Function	Year	Designer	Style	Floors	Axis	Main Entrance		
									Steps	Portico	Planting
National Central University (NCU)	1	Auditorium	f6	1931	Parmer & Turner Architects	s1	3	a1	●		g2
	2	Mengfang Library	f6	1924	Jousseume Pascal	s1	2	a1	●	●	g2
		(enlargement)	f6	1933	Tingbao YANG						
	3	Biology Building	f1	1929	Zongkan LI	s1	3	a1	●		g2
	4	Science Building	f1	1927	Tingbao YANG et al.	s1	3	a1	●	●	g2
	5	Literature Faculty	f1, f2	1922	unknown	s2	2	a1	●	●	g1
	6	Law Faculty	f1, f2	1919	unknown	s2	2	a1	●	●	g1
	7	New Classroom	f1	1929	unknown	s4	2	a1	●		g2
	8	Plum Hut	f6	1933	unknown	s4	1	a1	●		g3
	9	Dental Hospital	f4	1936	Tingbao YANG	s4	3	a1	●		g2
	10	Stadium	f6	1922	unknown	s2	3	a1	●	●	g0
University of Nanking (UN)	11	Technology Practice Room	f1	1918	unknown	s4	2	a1			g2
	12	Administration Building	f1, f2	1919	PFHA*	s3	2(5)	a1	●		g2
	13	Science Building	f1	1917	PFHA	s3	3	a1			g4
	14	West Science Building	f1	1925	A.G. Small	s3	2	a1			g4
	15	Northeast Building	f1	1935	unknown	s3	4	a1	●		g1
	16	Library	f6	1936	Tingbao YANG	s3	2	a1	●		g2
	17	Sage Chapel	f5	1918	PFHA	s3	2	a1	●		g4
	18	Twinem Memorial Chapel	f5	1923	PFHA	s3	1	a1	●		g2
	19	Mc Cormic Dormitory 1	f3	1925	PFHA	s3	2	a1			g1
	20	Mc Cormic Dormitory 2	f3	1925	PFHA	s3	2	a1			g0
	21	Mc Cormic Dormitory 3	f3	1925	PFHA	s3	2	a1			g1
22	Mc Cormic Dormitory 4	f3	1925	PFHA	s3	2	a1			g0	
Gimling College (GC)	23	No.100 Building	f6	1923	Henry K. Murphy	s3	2	a1	●		g2
	24	No.200 Building	f1	1923	Henry K. Murphy	s3	2	a1	●		g4
	25	No.300 Building	f1, f2	1923	Henry K. Murphy	s3	2	a1	●	●	g4
	26	No.400 Building	f3	1923	Henry K. Murphy	s3	2	a1			g0
	27	No.500 Building	f3	1923	Henry K. Murphy	s3	2	a1			g0
	28	No.600 Building	f3	1923	Henry K. Murphy	s3	2	a1			g0
	29	No.700 Building	f3	1924	Henry K. Murphy	s3	2	a1			g0
	30	Library	f6	1934	Henry K. Murphy	s3	2	a1	●		g1
	31	Chapel and Music room	f5, f6	1934	Henry K. Murphy	s3	2	a1	●		g1

*PFHA: Perkins Fellows & Hamilton Architects (USA). Architectural functions: f1 Teaching use (12), f2 Administrative use (4), f3 Residential use (8), f4 Medical use (1), f5 Religious use (5), f6 Cultural use (8). Architectural styles: s1 Western classical style (4), s2 Simplified Western style (3), s3 Traditional renaissance building of combined Chinese and Western style (20), s4 Modern Style (4). Axis of symmetry: a1 Left-right symmetry (31), a2 Left-right asymmetry (0). With steps (20) With portico (6). (): Figures in brackets are the results of each statistic.

Planting Situation

g0: Without green (7)

g1: Grass (7)

g2: Symmetric planting (11)

g3: Asymmetric planting (1)

g4: Compound planting (5)

Steps and Portico

● With it

Building

Portico

Steps

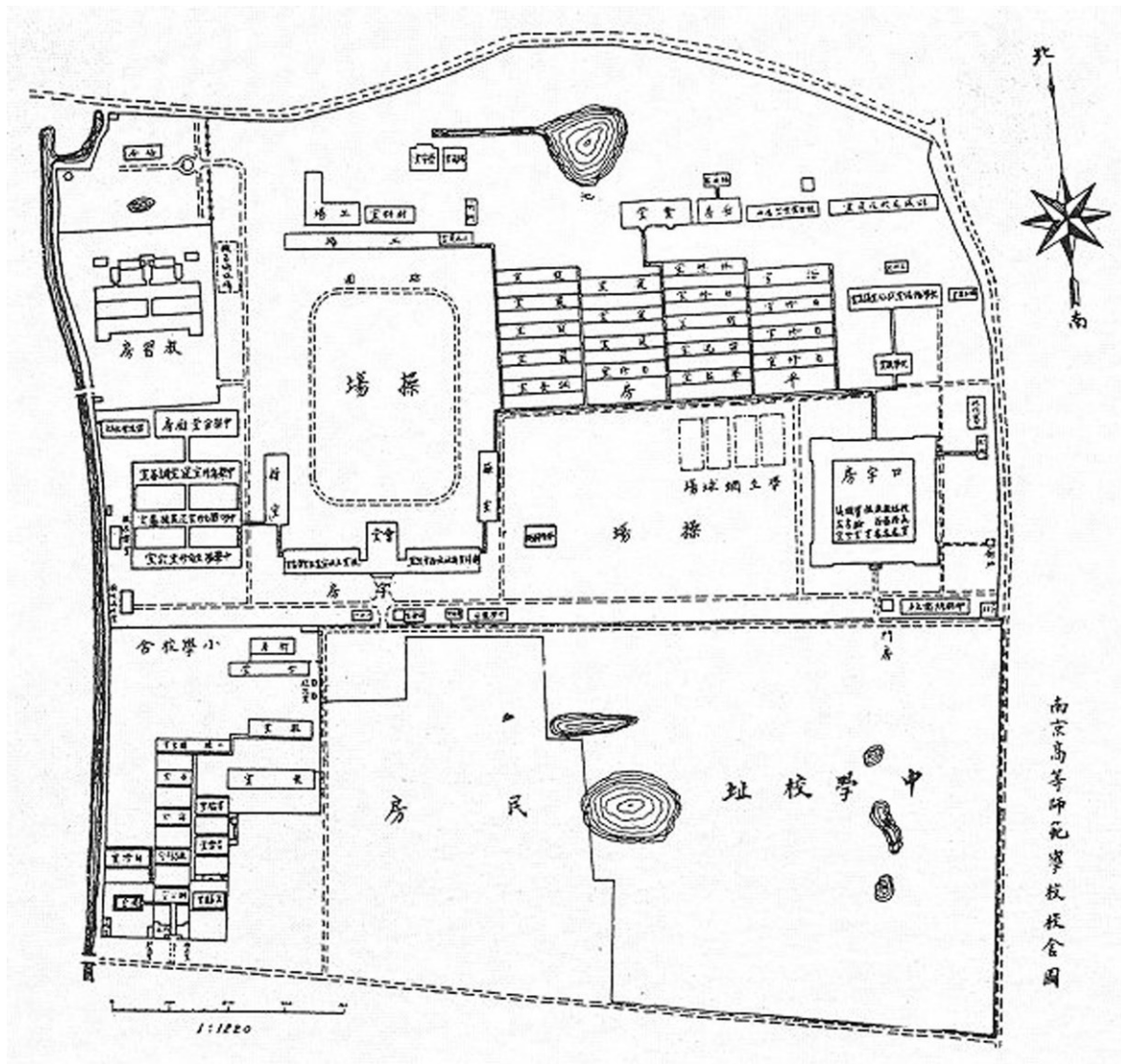


Figure-4-2 Plan of Nanjing Higher Normal School (1915)

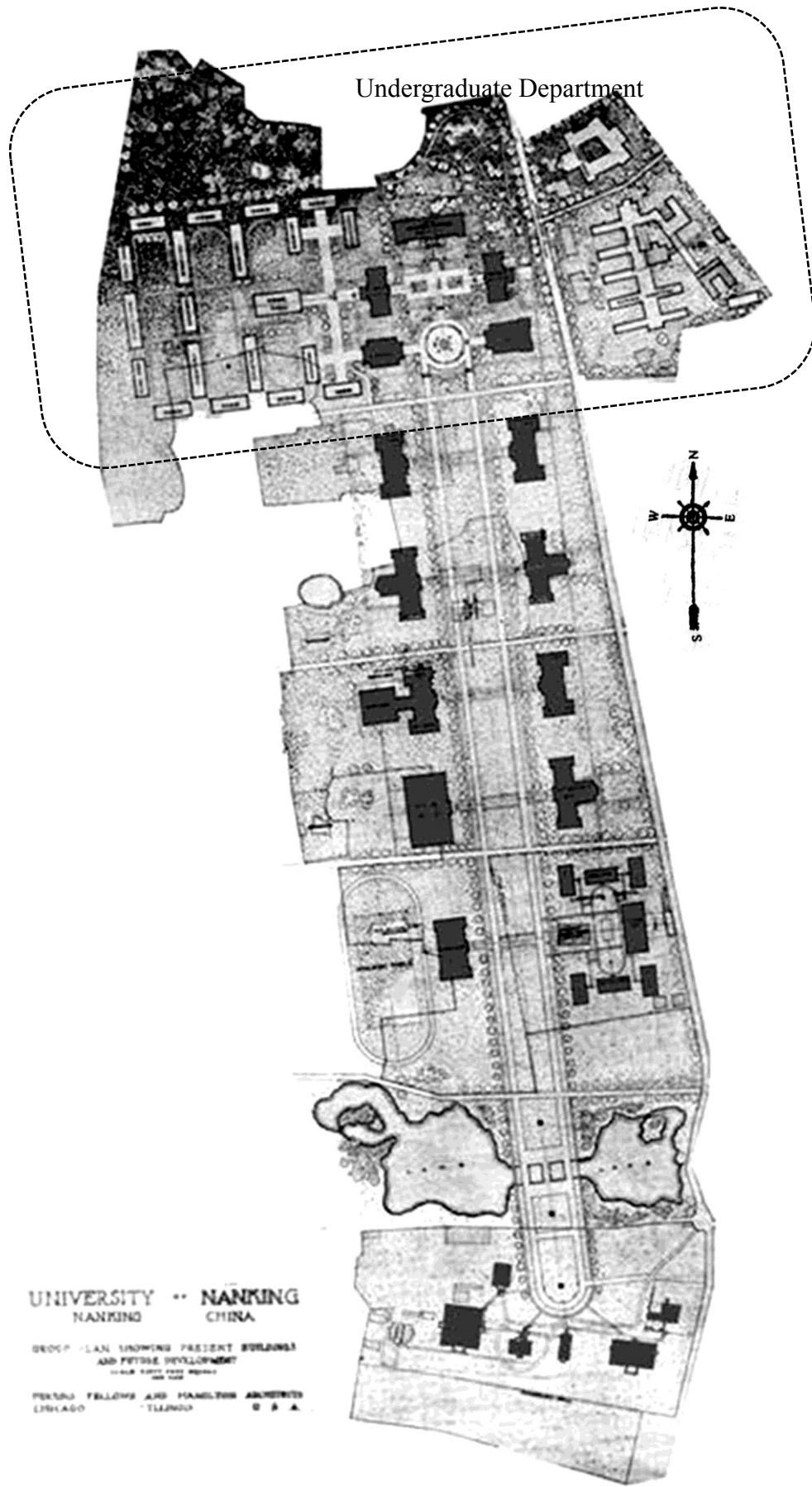


Figure-4-3 Master Planning of UN (1914)

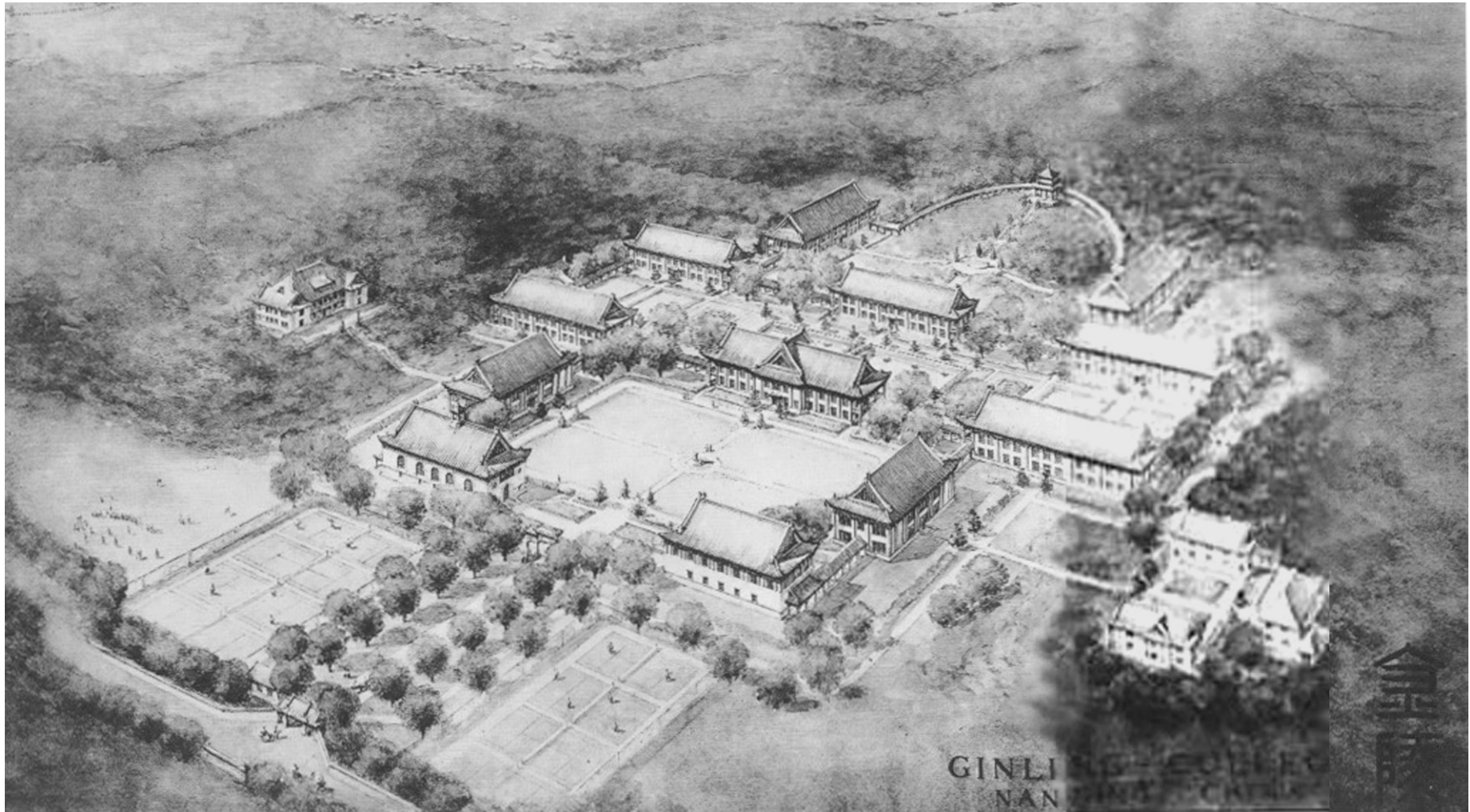


Figure-4-4 Bird's-eye View of the Planning of GC (1921)

4.4 The Composition and Features of Campus Spaces

As described previously, the authors classify campus spaces into: entrance space, main-square space and subsidiary spaces. The entrance spaces of these three universities consist of entrance gates and spaces inside and outside the gates. Specifically, they include three gates (G1, G2 and G3 respectively), and six spaces inside and outside the gates (E1~E2, E3~E4, and E5~E6, respectively). The main-square space refers to the most important public open space at a college/university, which is a major space for public activities and exchanges among students and teachers, i.e. the major venue for such outdoor activities as party, communication and performance. This kind of space plays a very important role in the spiritual construction of college/university campuses. The main squares on these three campuses are M1, M2 and M3 respectively. Subsidiary space refers to the activity space allocated and formed on the basis of main buildings outside the main square space, or the activity space designed artificially. These three universities have 17 subsidiary spaces in total (A1~A6, B1~B6 and C1~C5). According to functional attributes, they can be classified into three types: (1) external space attached to public buildings; (2) external space attached to dorm buildings, and (3) space for sports. Please refer to Figure-4-5 for the location and distribution of the above-mentioned spaces, and refer to Figure-4-6 for the composition form and flow-line composition of each space.

In addition, since the main entrance space is the key part for the association between the internal space and external space of buildings, it has the most centralized pedestrian flow. Based on the research into the approach space of buildings,¹⁴⁾ the authors investigated the composition feature of the main entrance space of various buildings in terms of plantation forms, the setting of steps and porches and the relationship between buildings and roads. Please refer to Table-4-3 for relevant statistical information about 31 main buildings and their main entrance spaces.

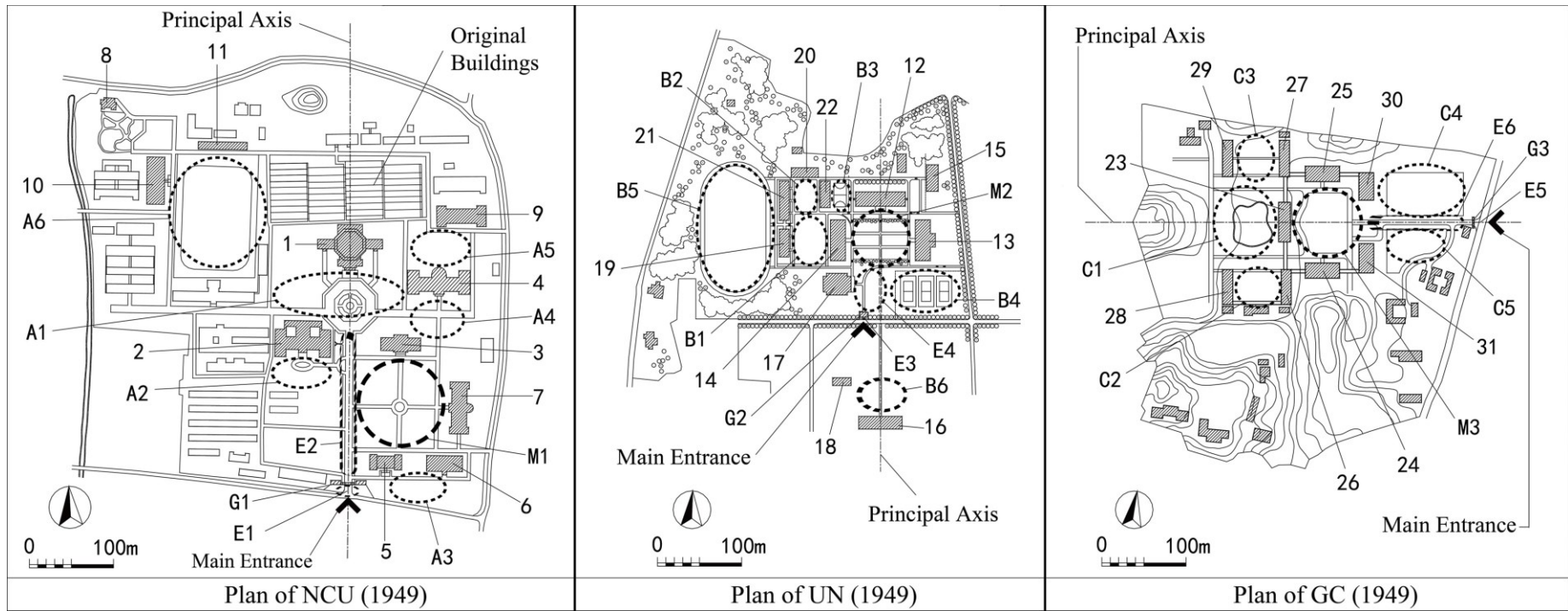


Figure-4-5 Plans of Three Campuses

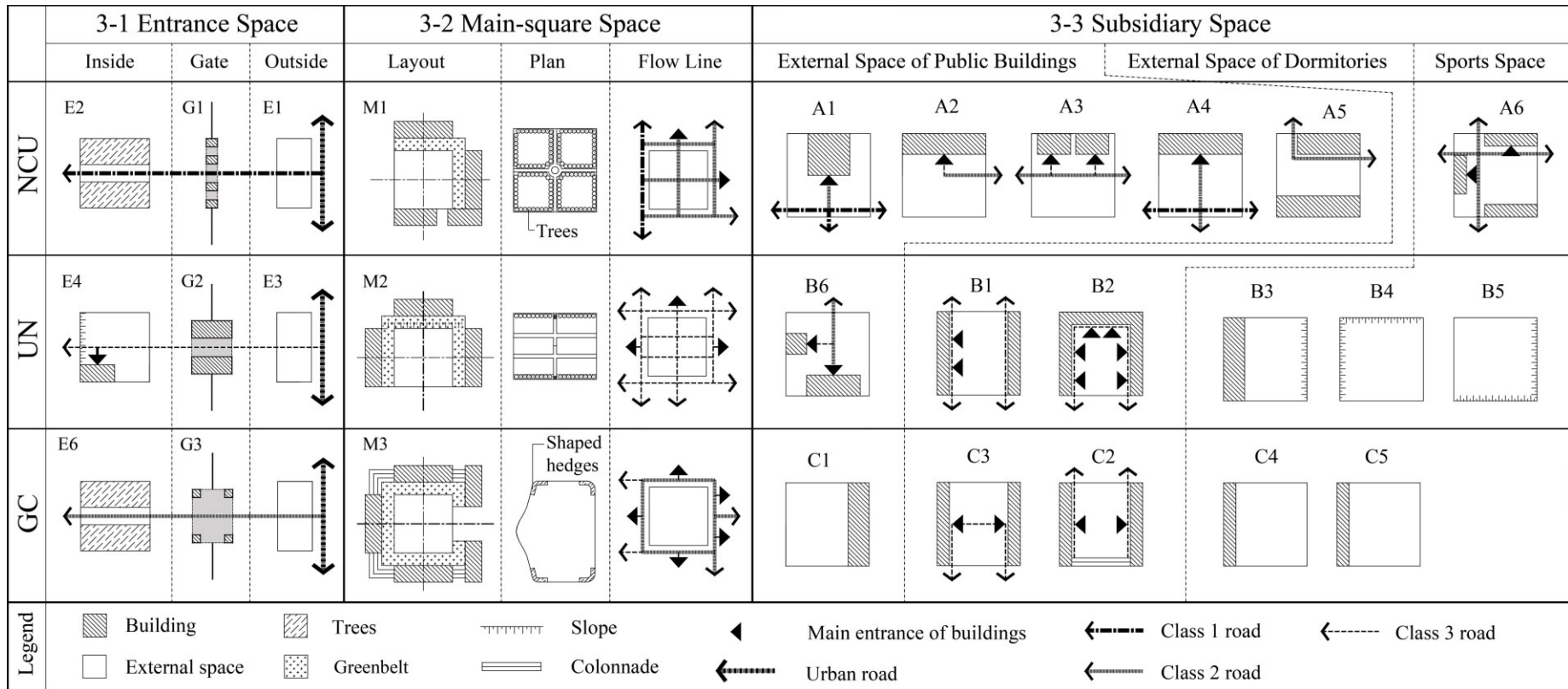


Figure-4-6 Analysis on Spatial Composition Patterns and Flow Lines

In the following, the authors will investigate and analyze the spatial composition of the campuses of these three universities and its features.

4.4.1 National Central University

(1) Spatial Composition

G1 is the simplified style of Western classic architecture. Its receding road forms a buffer space of the entrance (E1). E2 is a broad avenue, which was originally used by foreign countries and was later brought into China. With a length of about 180 meters, it is the arterial road of this university. G1 and No.1 constitute the principal axis of this university. Through the gate-opening (6 meters high), we can see the No.1 at the end of the road (Figure-4-7). M1 is located on one side of the principal axis. With a flat terrain, it is in the form of three-sided courtyard enclosed by four buildings (Figure-4-6, Figure-4-8 and Figure-4-9). The ratio between center sight distance and building height ranges from 3 to 4, with an open space. The central axis of No.3 and No.7 divides the space into four square lawn spaces, thereby forming the traffic route (Figure-4-6). At the central confluence of the cross-shaped roads, there is a small round square, on which there was a round flower bed³⁾ (now a bronze tripod statue). As the external space of No.1, A1 consists of the traffic square in front of No.1 and the lawn on the left and right side of No.1. As a spatial form, the traffic square is unique among these three universities. This square has not only been the traffic hub, but also its octagonal regular flower bed³⁾ (now a pool and a fountain) is in harmony with the octagonal shape of No.1 (Figure-4-10 and Figure-4-11). A2, A3 and A4 are all spaces in front of the public buildings. Located between the two buildings, A5 chiefly belongs to No.4. The above-mentioned four spaces are based on grassland landscape. As a sport space, A6 is the most open. This spatial form cannot be found in all traditional Chinese academies. Since the dorm building of NCU was left behind from the period of the ROC, its subsidiary space is not a research object in this thesis. At the main entrances of almost all buildings, footsteps and greenbelts have been set up, with almost all plants arranged symmetrically (g2). European-style porticoes have been set up in five buildings (Table-4-3).

(2) Composition Features

Composition Elements: Pavements are chiefly expressed as roads and small-acreage squares. The universal application of big lawns, the interspersions of flower-beds and topiary shrubs, symmetrical avenues, European-style porticoes, and gorgeous European-style buildings (Table-4-3)

jointly enable the entire campus space of NCU to express a completely-Westernized style.

Spatial Forms: Relatively, entrance spaces have relatively small sizes and a strong sense of enclosure. The main square takes the form of three-sided courtyard. At its center, there is an open lawn. In terms of spatial configuration form, most subsidiary spaces are open ones. The setting of a large-sized sport space proves that modern Chinese university education began to attach importance to all-round development and accept Western culture in many aspects.

Flow Lines: The flow-line composition of the entire campus is based on the principal axis. As the hub, the square in front of the auditorium organizes traffic flow lines. All buildings are expressed as parallel with or perpendicular to the principal axis and their main entrances are located at the center in front of buildings. Therefore, the flow-line organization of the entire space is expressed as cross-shaped and orthogonal road grids, with a clear distinction between the important and the less important.



Figure-4-7 The Gate of NCU



Figure-4-8 The Main Square and the New Classroom Building (No.7)



Figure-4-9 The Main Entrance of the Biology Building (No.3)

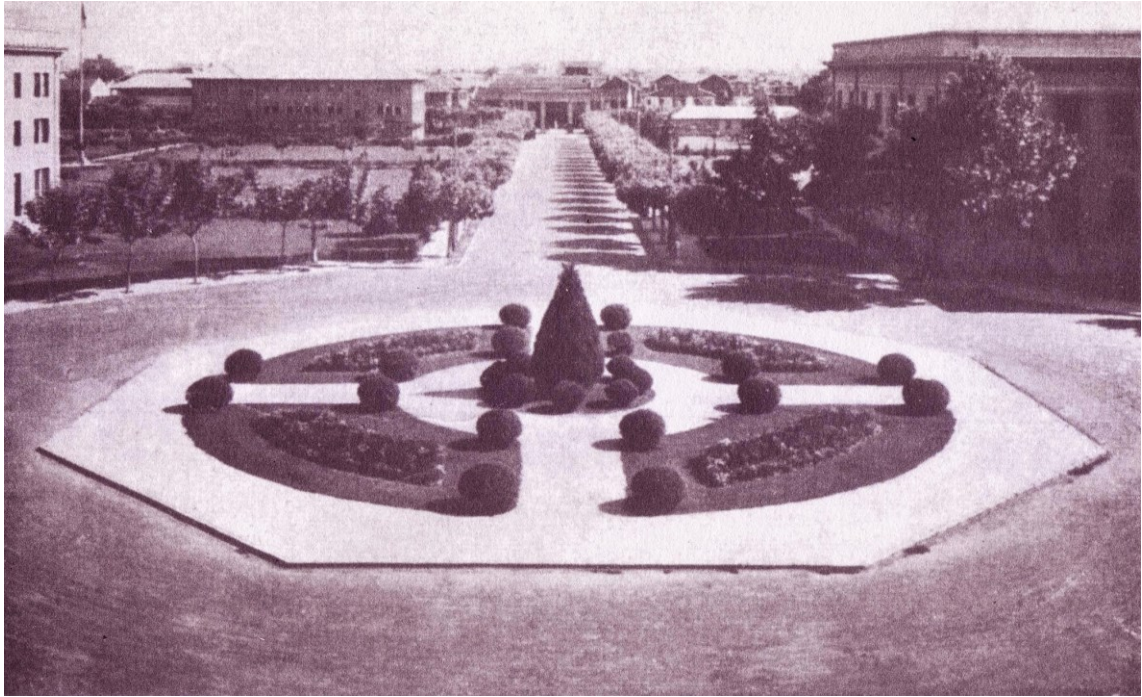


Figure-4-10 The Traffic Square of the Front of the Auditorium (No.1)



Figure-4-11 The Picture of the Auditorium Building(No.1)



Figure-4-12 The Picture of the Mengfang Library (No.2)



Figure-4-13 The Picture of the Science Building (No.4)

4.4.2 University of Nanking

(1) Spatial Composition

G2 was a temporary gate (now it does not exist any longer), in the style of corridor-type traditional Chinese buildings³⁾ (the door-opening is 3.3 meters high), located on the side of the principal axis, with No. 17 nearby. E3 is a buffer space between the gate and road, including a platform and some doorsteps. On both sides in front of G2 there are two symmetrical tree pools (Figure-4-14). E4 is the first-tier grassland space behind G2 (Figure-4-18). The gate was originally planned at the southern end of the central axis of the campus. There are three sections of long bar-shaped greenbelts from the gate to the Undergraduate Department, constituting a strong axis-like introductory space (Figure-4-3). M2 is enclosed by No.12, No.13 and No.14, presenting a pattern of courtyard opening on one side and enclosed on three sides (Figure-4-15~4-17). This space is the central area of UN, with a flat terrain and an open lawn, the direction of which is perpendicular to the principal axis. Among the three buildings, No.12 is the main one, located at the end of the axis. Its 5-storey-high tower has become the visual focus of the entire campus space (Figure-4-15). No.12 and No.16 jointly constitute the north-south principal axis of the campus space. The lawn square is the second-layer space after entry. The subsidiary greenbelt in front of No.12 is the third-layer space. On the slope between these three spaces, plants of various species grow together, having reinforced the vertical division of the space. The roads of these two layers are connected through steps. Please refer to Figure-4-6 for the flow-line structure of this space. Both B1 and B2 are residential courtyards, located to the west of M2. Considering secrecy, their spaces assume a semi-closed form. At the center of either of the two courtyards, there is a lawn space, surrounded by topiary hedges. B3, B4 and B5 are sport spaces, all of which are spaces formed through subsidence topography (Figure-4-19 and Figure-4-20). Considering the interference of sports with teaching and the large-size requirement of sports ground, almost all spaces of this kind are distributed in the wide and open area on the outer side of main building complexes. B6 is the atrium space of the library. On both sides of its entrance road, there are symmetrical plants, with other areas covered with natural plants.

(2) Composition Features

Composition Elements: Almost all pavements are expressed as roads. In terms of planting configuration, there are both natural plantings and regular plantings, as well as both traditional plant allocation, Western-style topiary

hedges and big-lawn landscape. The planting design and architecture of this kind combining both Chinese and Western elements (Table-4-3) jointly constitute the unique campus space in both Chinese and Western styles. In addition, the setting of steps and ramps in many spaces has very well met the requirement of slope topography conditions. Moreover, the abundant change of height differences among different platforms has also added the sense of hierarchy and the interest of spaces.

Spatial Forms: In terms of the configuration relationship between external spaces and buildings, there are two forms of enclosing from three sides and one form of enclosing from two sides, with all others being open forms. The main square is very open. The dorm courtyard is located beside the main space, with a strong sense of enclosure. All sport spaces take advantage of the subsiding topography, and two larger-size sport spaces are located on the outer side of the campus. Although there are a small number of spaces on the campus, there are abundant spatial feelings.

Flow Lines: Based on campus planning, the configuration of main buildings was firstly decided and then the traffic flow lines were organized. Based on the principal axis, the road system is distributed in a parallel or perpendicular way. All roads are footpaths, with no obvious distinction between the important and less important. The entire road system and buildings are configured as a whole.



Figure-4-14 The Gate of UN



Figure-4-15 The Scenery of the Administration Building (No.12)



Figure-4-16 The Main Square and the West Science Building (No.14)



Figure-4-17 The Picture of the Science Building (No.13)



Figure-4-18 The Scenery of the Sage Chapel (No.17)



Figure-4-19 The Picture of the Basketball Court (B3)

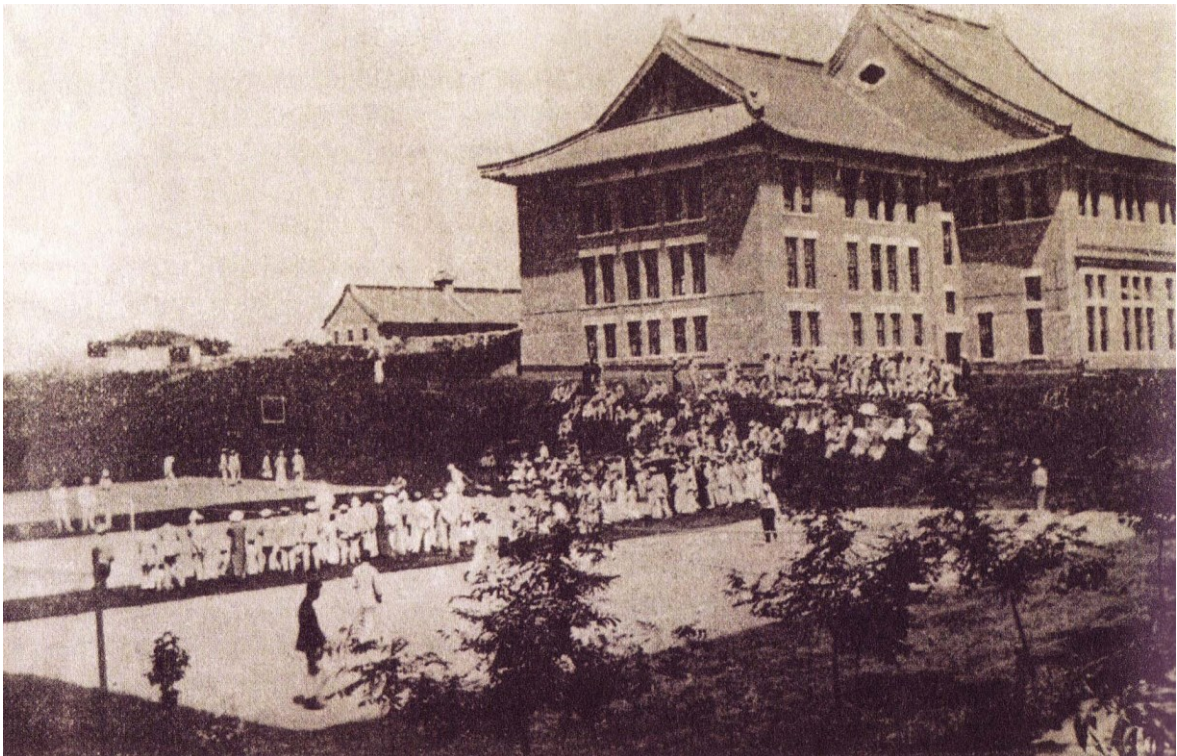


Figure-4-20 The Picture of the Tennis Court (B4)

4.4.3 Ginling College

(1) Spatial Composition

G3 was a four-column traditional Chinese building³⁾ (so far, it has been re-established). With G3 receding, and enclosing walls on both sides contracting internally, E5 has come into being. E6 is a straight avenue, with a length of about 150 meters (Figure-4-21). In the original plan, there was a screen wall on the road just opposite the gate, and there was a memorial archway at the end of the avenue. These factors and the gate jointly constitute an entrance space full of traditional characteristics (Figure-4-4). Located in the central area of the campus, M3 assumes a semi-closed spatial pattern enclosed by 5 buildings on four sides, with a flat and smooth site and its central area being a complete lawn space. (see Figure-4-22~4-24) Inside all corners of roads around the lawn space, topiary hedges are grown. With its spatial direction perpendicular to the main axis, it forms a contrast with the vertical space of entrance. Five buildings are connected through colonnades. The setting of colonnades connects architectural spaces as a whole, and expresses cares about women as well---avoiding exposure to the sun and rain (Figure-4-25). Located on the axis, No. 23 is the main building of this space, with its central roof rising. All the main entrances of the five buildings face the square, and are covered with greenbelts (Table-4-3 and Figure-4-26). Just as shown in Figure-4-6, the flow line of this space is shaped like a tetragon. The road in front of the main building is designed in a curve, possibly embodying the femininity of women. It also echoes the natural water-bank line behind the building (based on the speculation of the author). Considering the requirement of privacy, C1, C2 and C3 are located in the rear of M3. At the center of C1, there is an artificial pool with a curved bank (Figure-4-27). Plants of various natural forms grow around the pool. Therefore, C1 is expressed as a space of “backyard garden” full of traditional Chinese characteristics. C2 and C3 on both sides present semi-closed grassland landscape, serving as spaces of dorm courtyards. Adjacent to the buildings, entrance roads of the four dorm buildings are not accompanied by any greenbelts. Distributed on both sides of entrance roads, both C4 and C5 are open sport spaces (Figure-4-28 and Figure-4-29).

(2) Composition Features

Composition Elements: Almost all pavements are expressed as roads. Lawns are extensively applied. In particular, the complete central grassland of the main-square and topiary hedges around it constitute campus landscape featured by modern Western courtyards. Natural plantings and water-surfaces

and colonnades convey the appeal of traditional Chinese gardens. Gardens and buildings of this kind combining both Chinese and Western elements jointly constitute the unique spatial culture of campus.

Spatial Forms: The forms of the eight spaces of GC are configured clearly. Centered around the main square and based on the main axis, they are distributed strictly symmetrically. The avenue at the entrance has reinforced the sense of the depth of campus spaces and highlighted the open sense of the main square. The separate setting of the spaces of dorm courtyards and sports expresses the consideration of different functional requirements. This kind of independent and separate spatial structures is different from the mixed layout of traditional Chinese academies.

Flow Lines: Based on campus planning, the main buildings and the road system were sequentially designed, which are unified as a whole, with a clear distinction between the important and the less important. The direction of flow line is based on the principal axis. From the gate to the each building's entrance, flow lines are arranged in a parallel or perpendicular way, thus constituting a grid system. The setting of colonnades constitutes an open internal traffic.



Figure-4-21 The Avenue of the Entrance Space



Figure-4-22 The Main Square of GC



Figure-4-23 The Scenery of the Main Square and No.23



Figure-4-24 The Scenery of No.31



Figure-4-25 The Colonnade Between the Buildings



Figure-4-26 The Planting Landscape of the Front of No.23



Figure-4-27 The Scenery of the Pool



Figure-4-28 The Picture of a Sports Ground



Figure-4-29 The Picture of a Sports Ground

Table-4-4 Analysis on Composition Elements and Spatial Forms

	NO.	Spatial Composition Elements							Scale	Configuration Patterns	Composition Patterns of Typed Spaces		
		Trees	Shrubs	Shaped-shrubs	GB	HD	Pavement	Lawn					Pool
Entrance Space	E1						●		r0	p1-4		Outside	
	E3		●			●	●		r0	p1-4			
	E5						●		r0	p1-4			
	E2	●					●		r0			Inside	
	E6	●					●		r0				
	E4	●	●	●		●	●	●	r4	p1-4			
Main-square Space	M1	●		●			●	●	r4	p3		M. S.	
	M2	●	●	●		●	●	●	r4	p3			
	M3	●	●	●	●		●	●	r4	p3、 p2-1			
Subsidiary Space	A2	●		●			●	●	r3	p1-4		External Space of Public Buildings	
	A4	●	●	●			●	●	r2	p1-4			
	C1	●	●		●		●	●	●	r3			p1-4
	A1	●	●	●			●	●		r2			p1-2
	A3	●					●	●		r3			p1-2、 p1-2
	B6	●	●	●		●	●	●		r2			p1-2、 p1-2
	A5	●	●				●	●		r3	p2-2、 p1-3		External Space of Dormitories
	B1	●	●	●			●	●		r2	p2-2		
	C3		●				●	●		r3	p2-2		
	B2	●	●	●			●	●		r2	p3		
	C2	●	●		●	●	●	●		r3	p3		
	C4	●	●				●	●	●	r5	p1-4		Sports Space
	C5	●	●				●	●		r5	p1-4		
	B3					●	●	●		r0	p1-4		
B4					●	●	●		r5				
B5	●	●			●	●	●		r5				
A6	●					●	●		r5	p2-1、 p1-3			
Sum		20	16	10	3	8	26	22	2				
Legend:		Building		Greenbelt		External space		Urban road					
Scale: r0(6)、 r2(5)、 r3(6)、 r4(4)、 r5(5)													
(): Figures in brackets are the statistics number.													

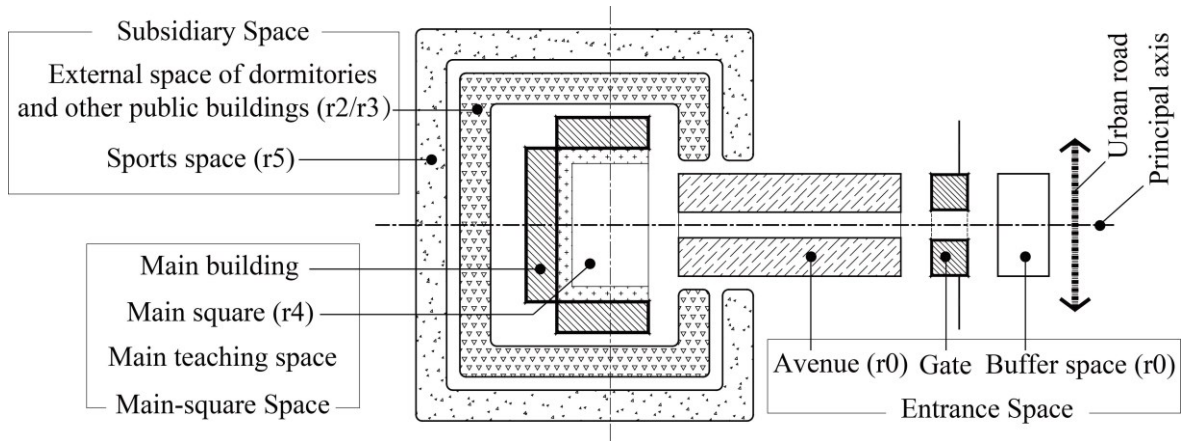


Figure-4-30 General Composition Pattern of Campus Spaces

4.5 Comprehensive Consideration

As we can see from the above-mentioned investigation and analysis, on the one hand, the structural features of campus spaces of these three universities are all expressed as (Please see Table-4-4 and Figure-4-30): (1) the principal axis+ stub-end buildings + main square in the style of three-sided courtyard + lawn space; (2) Two spaces have come into being in the entrance space, with the gate as a demarcation point. The outer space is a small-sized buffer space, while the inner space is an avenue-style introductory space. (3) The moderate-sized dorm courtyards are spatially arranged behind or beside the main space of campus out of consideration of functions. (4) The large-sized sport spaces are arranged on the outer side of the campus. This feature indicates that the spatial construction of university campuses in the period of the ROC in Nanjing is marked by sublation of the spatial layouts of traditional Chinese academies, e.g. the spatial structural features represented by four famous academies in ancient China^①: symmetry along the central axis; more than one

^① Four famous academies in ancient China include: Bailudong Academy in Jiangxi Province; Yuelu Academy in Hunan Province (Figure-4-31); Songyang Academy and Yingtian Academy in Henan Province. In ancient China, academies carried a spiritual temperament and cultural mission similar to those carried by modern universities. Among them, Yuelu Academy was built in the Northern Song Dynasty (976 AD). The courtyard form of “symmetry along the axis; multilayer in depth” was adopted for the layout of this ancient building. Its main buildings, including front gate, entrance gate, second gate, classrooms and imperial library, are concentrated on the central axis. Classrooms are arranged at the center of the central axis. Dorms and the sacrifice temple are arranged on

courtyard; enclosed quadrangle and strict hierarchy system.¹⁵⁾ In addition, all the more, this feature is expressed as the imitation of the layouts of modern Western university campuses, especially the impact of the ideology of American campus planning at that time, namely: the modern university campus planning represented by that of University of Virginia^① (Figure-4-32): symmetry along the central axis, main space in the style of semi-open three-side courtyard, stub-end main building, broad and vast lawn, etc. From the planning figure of UN and GC, we can more obviously feel the impact of this kind of planning and design ideology (Figure-4-3 and Figure-4-4). This indicates that a compromise has been reached on the construction of university campuses during the collision between oriental and Western culture. From one side, this also reflects the society at that time: the invasion of Western culture and the yearning of Chinese society for Western culture during the transition period from the feudal society to the capitalist society.

both sides. This courtyard marked by symmetry along the central axis and layer-by-layer progression has not only built a solemn, ingenious, quiet and remote sense of depth and visual effect, but also embodied the social ethics of Confucian culture: a strict sequence between superiors and inferiors, a difference among people of different social strata and a vivid distinction between the primary and the secondary.

^① University of Virginia designed by Thomas Jefferson (1743-1826) typically represents the American-style layout of college/university campuses: “the technique of spatial processing defined by “open-style layout of three-sided courtyard + broad afforestation + buildings at axis terminals”. It is described as “the greatest campus design in the American architectural history”.

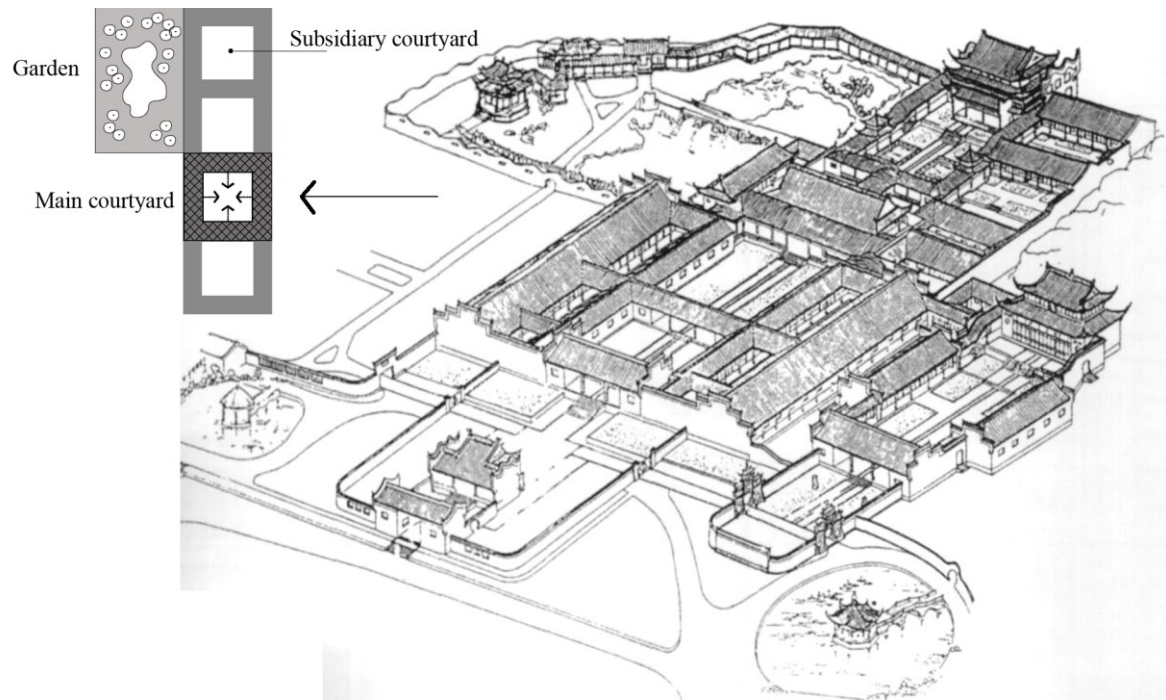


Figure-4-31 The Image of Yuelu Academy in Hunan Province



Figure-4-32 The Campus Painting of University of Virginia

On the other hand, in terms of the style construction and spiritual pursuit of campus spaces, NCU expresses a completely-Westernized style, while UN and GC express a style combining both Chinese and Western elements. It can be inferred that private church universities and national universities are different in the construction requirement of campus styles. We can also notice from this difference that national universities funded by the government enjoy financial advantages and pursue Westernized style all the more, thus expressing the “grand” and “internationalized” spirit of the government. From the number of faculties and students of NCU (Table-4-2), we can also notice the pursuit of “grandness”. Moreover, this Westernized style is consistent with the objective of the “Party-oriented education^①” of the National Government----to promote the Westernized political ideology with a view to reinforcing the ruling status of the National Party. Just like government agencies built by the National Government, both buildings and gardens express an obvious Westernized style.¹⁾ In contrast, the campus spaces of the private church university founded by foreign missionaries not only fully demonstrate the Western gardening culture, but also attach importance to the expression of Chinese native gardening culture. This can better reach the missionary purpose by adapting to Chinese customs and catering to the psychology of Chinese^②. Just like some church buildings, the builder strived to build them in the traditional Chinese style to reach the same purpose.²⁾

^① Party-oriented education means that a ruling party spreads a set of political theories and ideologies of its own throughout the society so as to reinforce its ruling status, namely: a ruling party tries to cover the whole society with its own theories through all kinds of publicity and education techniques. Refer to: Jiang B. (2012): The Creation of National Central University and the Campus Politics in Post-revolution: Journal of Sun Yat-sen University 52(1), 78-87.

^② In the period of the Republic of China, there were a total of 16 church colleges/universities, more than 10 of which adopted the traditional Chinese style of architecture. The practice of adopting this kind of Chinese-style architecture for church colleges/universities was determined by the China-oriented (localized) missionary policy of Western churches. Just like such phenomena as missionaries’ wearing Chinese clothes, speaking Chinese, naming themselves in Chinese and adopting Chinese etiquettes, it aimed to suit Chinese customs, cater to the psychology of Chinese, and better serve the missionary purpose.

4.6 Summary

Based on the above-mentioned investigation and research, we can conclude that the spatial composition of university campuses in the period of the ROC in Nanjing has the following characteristics:

(1) In terms of the elements of campus spaces, the large-acreage open lawn landscape and cross-shaped orthogonal road-grids constitute the planar characteristic of campuses, thereby forming the keynote of Western style.

(2) In terms of spatial layout and forms, there is a controlling principal axis which commands all buildings and spaces on the campus. In addition, the setting of main buildings in the principal-axis and stub-end style expresses the collision and integration of Chinese and Western culture.

(3) An open space of three-sided courtyard has emerged on the basis of the enclosure of buildings. As the main space for public communication among students and teachers, this space embodies a kind of absorption of the planning philosophy of new-style American universities.

(4) In terms of the functional layout of campuses, dorms and classrooms are separated from each other, and a sport space is newly added, embodying a kind of absorption of the culture of Western modern universities.

(5) Different education-offering entities have different requirements for the spatial construction of campus environment. The composition of campus spaces not only represents physical composition, but also reflects the “political” or “religious” appeal of builders.

Therefore, the future research topics will include the constituent features of the campus spaces of socialist universities built after the founding of the PRC in 1949 as well as the way in which they embody the political philosophy of the government authorities.

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**Chapter 5 Spatial Composition and Characteristics of the Sun Yat-sen
Mausoleum**
中山陵の空間構成及び特徴



Figure-5-1 Picture of Dr. Sun Yat-sen

5.1 Introduction

Dr. Sun Yat-sen^① (Figure-5-1), premier of the Kuomintang (the National Party of China), passed away in Beijing on March 12, 1925. At that time, China was still in a period of civil wars among various warlords. To seek the legitimacy of its rule, the Kuomintang established and spread the cult of Dr. Sun. It presented an image of Dr. Sun as a great man in such areas as education and literature, and it established a day of memorial so as to publicize and inculcate the ideology of “Three People’s Principles”.¹⁾ Dr. Sun gradually became the spiritual leader of the Kuomintang and the Chinese Nation, and “Yat-sen” also became a political symbol. Until the People’s Republic of China was founded in 1949^②, the cult of Dr. Sun^③ prevailed throughout China. In addition, in memory of this founder of the Republic of China (ROC), relevant construction activities boomed in China and

^① The original name of Sun Yat-sen (1866-1925) is Sun Wen(孫文). Sun Zhongshan(孫中山) is the most popular of his Chinese names. He was premier of KMT, the first provisional president of the Republic of China, the advocator of Three People’s Principles, and National Father of the Republic of China.

^② From 1949, the cult of Mao Zedong began in China.

^③ The cult of Dr. Sun has two main forms: the first is “sacrifice” centering around the remains of Dr. Sun; the other is “memorial week” centering around the portrait and written material of Dr. Sun.⁷⁾

spread abroad. A huge building complex (made up of buildings dedicated to the memory of Dr. Sun) gradually came into being over the course of the next 60 years. It consists of several hundred types of buildings, including a tomb, former residences, memorial halls, and landscape designs.²⁾ The most representative of these is the Sun Yat-sen Mausoleum (SYM), which is extensively regarded as the most outstanding and important representative of modern architectural history in China.^{3) 4)} As one of the most sacred sites in modern Chinese history, the SYM is very highly valued in the field of academic research. Although the architectural and spatial layout of the SYM remains intact as a whole, two major changes have been made to it since 1949. First, the plane trees on both sides of the tomb passage have been replaced with cedars. Second, two big lawns in the mausoleum have been replaced with groves (see Figure-5-4, 5-5 and 5-6). These changes, especially the latter, have had a great influence on the characteristics of the spatial composition. Therefore, this study involves an investigation into the characteristics of the original spatial composition of the SYM, as it was during the period of the ROC, so as to offer important points for reference during the protection of cultural heritage.

Research on Dr. Sun is already quite a mature academic field.⁵⁾ At present, research on the SYM is mainly focused on such aspects as textual explorations of historical data,⁶⁾ architectural culture,^{3) 4)} and funeral politics.^{7) 8)} However, research into the spatial compositional features of the SYM is very scarce at present. The entire mausoleum park covers a total area of about 1.3 million square meters. It includes the SYM, complex of auxiliary buildings, and Nanjing Botanical Garden. Therefore, owing to space limitation, this paper focuses on the SYM that covers an area of about 70 thousand square meters as the research site, and, in particular, the external spaces of the buildings of the SYM as the object of this research. Based on the historical background of the ROC (1912–1949), this paper analyzes the spatial composition of the SYM and its characteristics.

5.2 Research Methods

5.2.1 Investigation Method

In the February and March of 2012, the authors collected and arranged public publications and electronic data related to the SYM (including previous research theses, investigation reports, historical literature, pictures, and photos) from such institutions/websites as the Library of Nanjing, the Jinling Library of

Nanjing, the Nanjing Urban Construction Archives, the Second Historical Archives of China, and websites of electronic journals. Based on these and the *Anthology of Historical Documents on SYM*,⁹⁾ the authors made an on-the-spot investigation into the SYM. In this way, the research forms of spatial composition of the SYM were restored to the original state during the period of the ROC.

5.2.2 Analysis Method

(1) Based on the results of the investigation described in Section 1.1., the spatial components and actual forms of the SYM were confirmed; relevant figures, drawn (Figure-5-10); and statistics of the spatial elements, collected (Table-5-1 and Table-5-2).

(2) Based on the results of the investigation into the site conditions of the SYM and the relevant previous research into its spatial composition, this paper defined the analyzed items as follows (see Table-5-1): “compositional elements,”¹⁰⁾ ¹¹⁾ “compositional forms,”¹⁰⁾ ¹²⁾ and “vertical composition.”¹³⁾ Based on different morphological characteristics, “compositional elements” are classified into “three-dimensional elements” and “plane elements.” “Compositional forms” include two parts: arrangement forms of compositional elements and spatial scales. With regard to “vertical composition,” the vertical design and visual landscapes of spaces are analyzed and investigated.

(3) Based on the division of spaces by three-dimensional elements (buildings, trees, walls, and so on) in vertical domains, this study divided the entire space of the SYM into 14 subspaces (Figure-5-11). From the perspective of the three analyzed items described in analysis method 2) (see the previous paragraph), this paper analyzed and investigated each subspace respectively.

(4) Finally, the characteristics of the overall spatial composition were summarized and the artistic conception as well as the reflection of the personal identity and status of Dr. Sun in the spatial composition was considered.

Table-5-1 Analyzed Items of Spatial Composition

Compositional Elements						Compositional Forms			Vertical Composition
Three-dimensional					Plane	Arrangement		Scale	
Buildings	No.	B1	B2	B3	B4	B5	a1: Encircled	a4: Circular	<p>Vertical boundaries (buildings/trees/wall/etc.) Activity space</p> <p>H: Height of the boundary D: Width of the space</p>
	Size	17.3, 3, 11	24, 8.8, 16.5	12.2, 10.4, 17	28, 22.5, 26	Φ16.5, H10	<p>a1-1</p> <p>Enclosed</p>	<p>a4-1</p>	
Exterior spatial elements	Plan			<p>Tombstone</p>	<p>Stone Statue</p>	<p>Stone Coffin</p>	<p>a1-2</p> <p>Semi-open</p>	<p>a4-2</p>	<p>r0: $D / H < 1$</p> <p>r1: $D / H = 1$</p> <p>r2: $1 < D / H \leq 2$</p> <p>r3: $2 < D / H \leq 3$</p> <p>r4: $3 < D / H \leq 4$</p> <p>r5: $D / H > 4$</p> <p>Enclosed</p> <p>Open</p> <p>Spatial balance point</p>
	Wall	Rail	Steps	Slope	Structure (stone lion, bronze ding, ornamental column)		Pavement	<p>a1-3</p>	
Legend: The size of buildings is length, width and height (Unit: m).									
No.S6	<p>a4-1+a2</p>	<p>Area of the three-dimensional elements</p> <p>Area of the plane elements</p>				a2: Sandwiched	a3: Adjacent		

5.3 Profile of the SYM

Dr. Sun was interred in Zijin Mountain, in the eastern suburbs of Nanjing, on June 1, 1926^①. As the mausoleum^② of Dr. Sun, the SYM is located on the southern slope of Zijin Mountain (Figure-5-2). Leaning against Zijin Mountain and facing south, the SYM is adjacent to the Ming Xiaoling Mausoleum^③ to its west and the Linggu Temple to its east (Figure-5-3). The site selection of this mausoleum conforms to feng shui—the geomantic concept in traditional Chinese residences and tombs.^④ The mausoleum was designed by an architect named Lv Yanzhi^⑤ (Figure-5-7 and Figure-5-8). The main buildings of the SYM include the Memorial Archway (B1), the Mausoleum Gate (B2), the Tombstone Pavilion (B3), the Sacrifice Hall (B4), and the Coffin Chamber (B5). Of these, B4 is the most central. B4 and B5 are connected, with B4 at the front and B5 at the back (see Figure-5-9, Table-5-1 and Figure-5-10 of Statistical Information on Buildings). All of the buildings lie on the central axis and feature the architectural styles of the traditional renaissance,^④ and were built using granite and reinforced concrete masonry. The construction of the SYM lasted for nearly six years (January 1926–December 1932). Since its completion, the public has been free to participate in memorial activities^⑥. The entire route for paying homage to the mausoleum belongs to pedestrian traffic (Figure-5-4, 5-5 and 5-6). During the years 1929–1936, the annual number of people paying their respects to the SYM was about 140,000.^⑨

^① In 1925, Dr. Sun said in his testament, “I hope that my remains can be buried at the foot of the Purple Mountain in Nanjing after my death, because Nanjing witnessed the founding of the Provisional Government of the Republic of China, marking the achievement of the 1911 Revolution.” Refer to this book: Committee for the Compilation of the Special Issue of Premier’s Funeral (1930) *Memoir of Premier’s Funeral*. Nanjing, 304PP.

^② “Mausoleum” is a special designation of the tombs of the monarchs in China. This name embodies the supreme sacred status of Dr. Sun.

^③ “Ming Xiaoling Mausoleum” is the mausoleum of Zhu Yuanzhang (1328–1398), the first emperor of the Ming Dynasty.

^④ Lv Yanzhi (1894-1929) (winner of 1st place in the design competition of SYM) graduated from the Architecture Department of Cornell University in the United States, and filled into the category of the first-generation Chinese architects with Western architectural knowledge.

^⑤ As set forth in Article One of Rules for Paying Homage to the Cenotaph of Premier in 1935, the visit by all Chinese and foreigners to this mausoleum is free of charge.^⑨

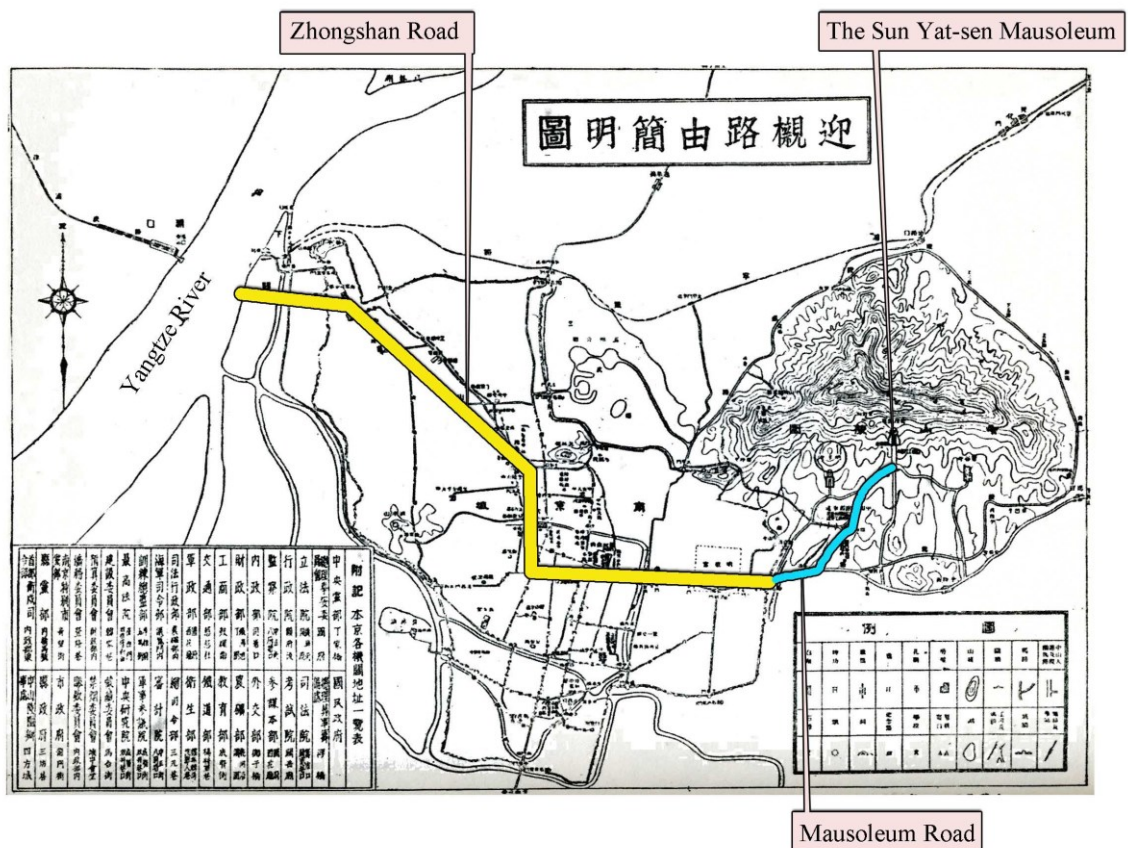


Figure-5-2 Location of Zhongshan Road and the SYM in Nanjing

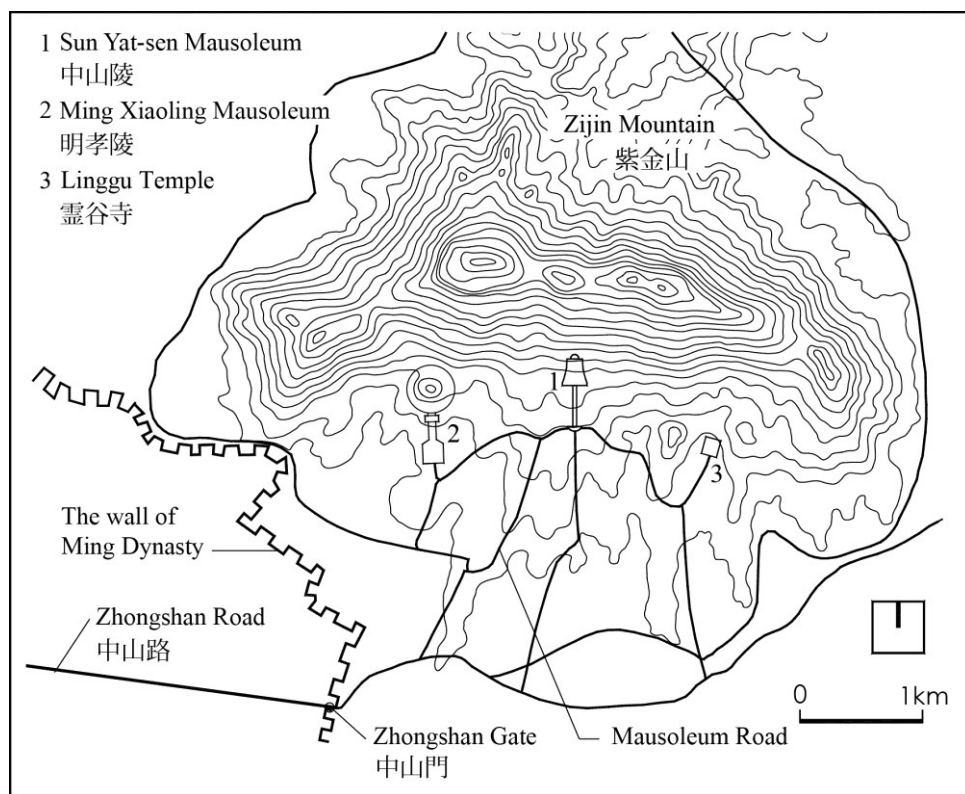


Figure-5-3 Plane of Zijin Mountain and Location of the SYM

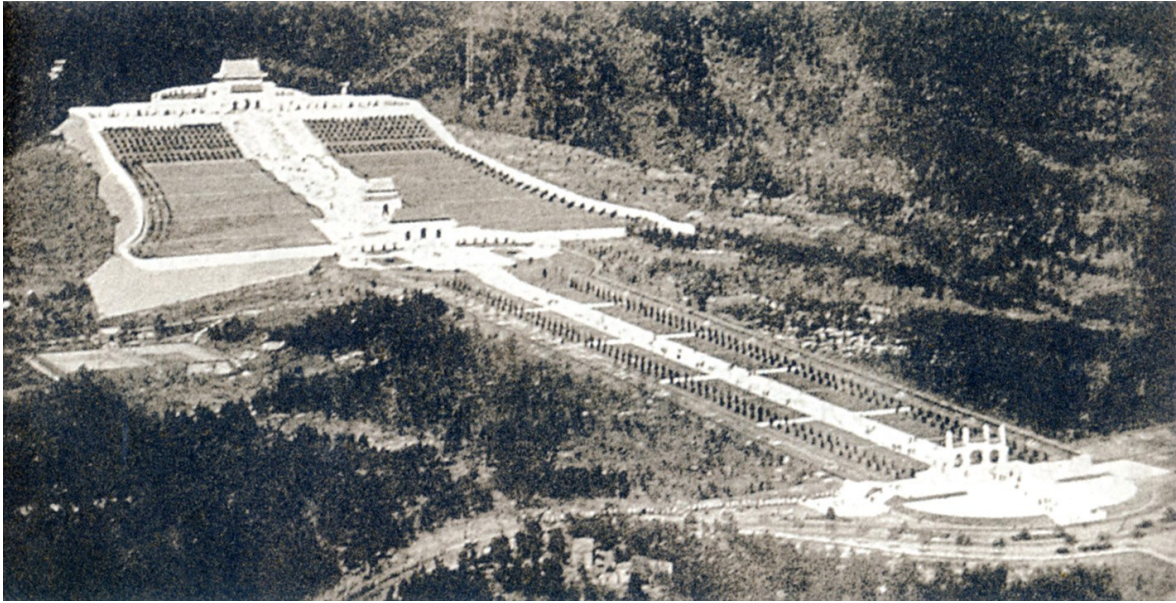


Figure -5-4 Picture of the SYM in the 1930s



Figure -5-5 The Scenery of the Rear Half of the SYM in the 2000s



Figure -5-6 The Whole Picture of the SYM in the 2000s



Figure -5-7 Picture of Lv Yanzhi

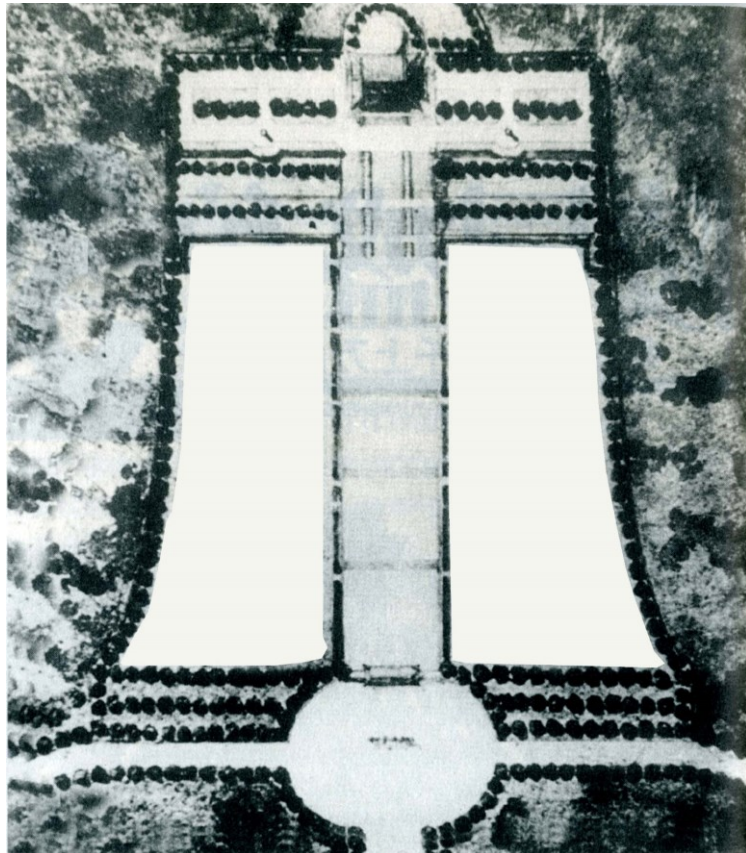
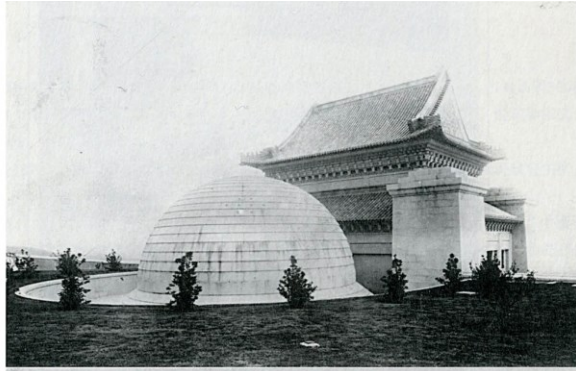
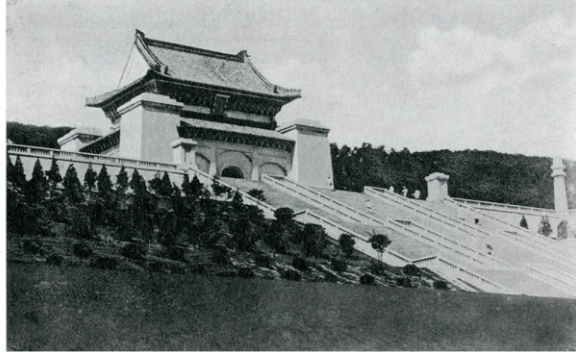


Figure -5-8 The Original Design Plan of the SYM (1925)



Coffin Chamber (B5)



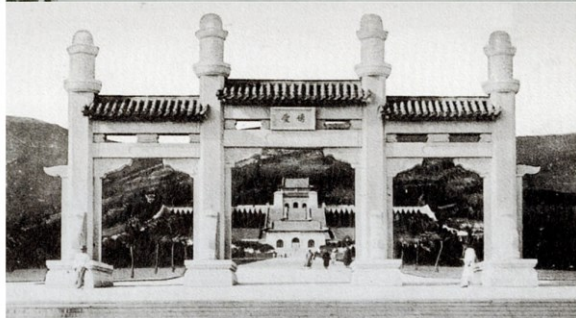
Sacrifice Hall (B4)



Tombstone Pavilion (B3)



Mausoleum Gate (B2)



Memorial Archway (B1)

Figure -5-9 The 5 Main Buildings of the SYM

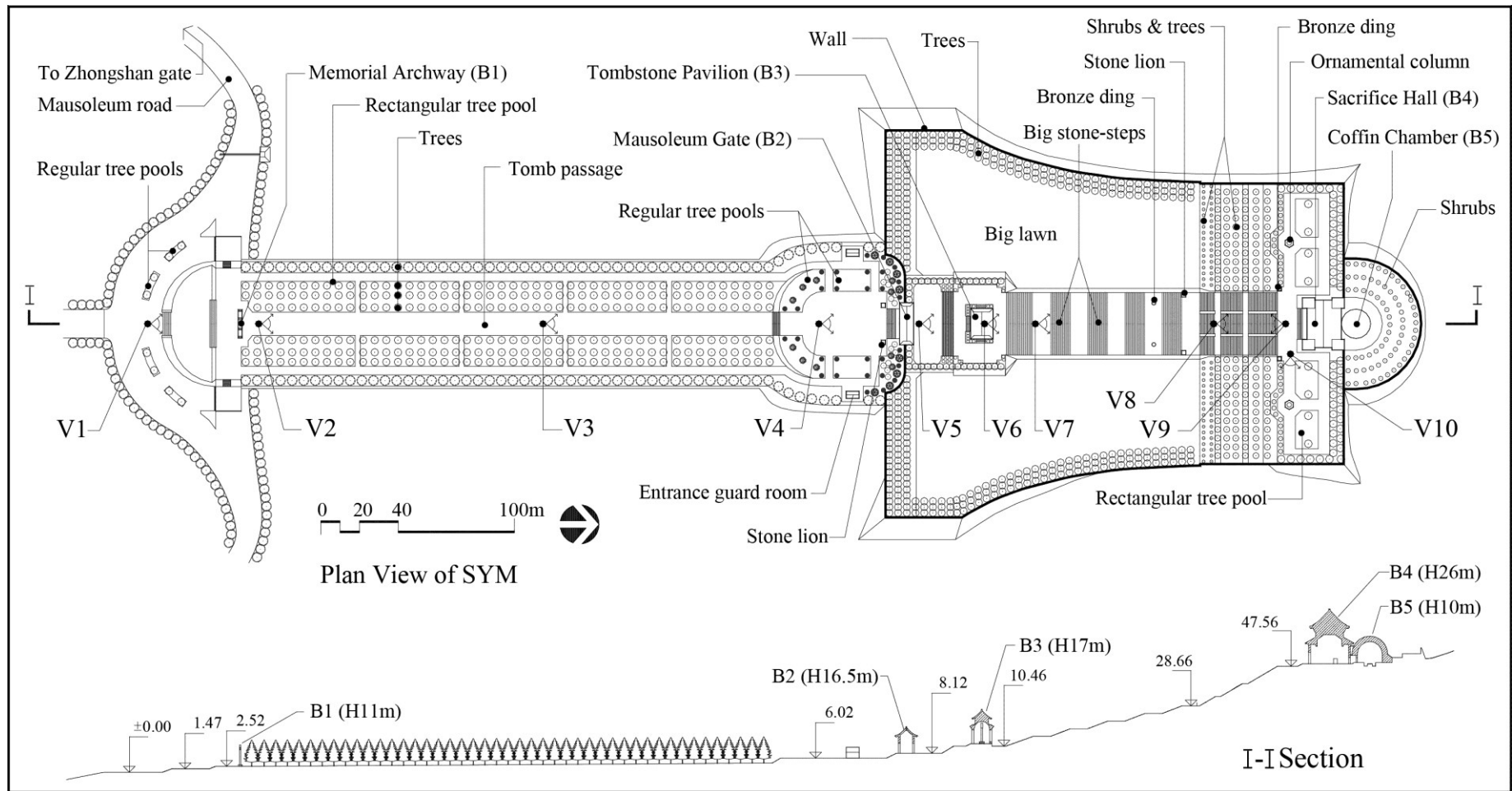


Figure -5-10 Plan and Section of the SYM

5.4 Spatial Composition and Characteristics

Based on the vertical limitation of three-dimensional elements and the clarity of spatial borders, the entire space of the SYM can be divided into 14 subspaces, which are called “activity spaces” in this paper. These spaces are numbered S1–S14 respectively, from the entranceway to the Coffin Chamber. As shown by Figure-5-11, S1 is the road in front of the mausoleum. S2 is a semioval square consisting of two layers of platforms (the front and rear platform). S1 and S2 jointly constitute the entrance space of the SYM. S3 is a tomb-passage space^① enclosed by square tree-lined pools on both sides. S4 is a square in front of the Mausoleum Gate, on which there are four regular lawns. S5 is a platform behind the Mausoleum Gate. S6 is the peripheral platform space of the Tombstone Pavilion. S7 is a space consisting of five groups of stone steps and five platforms arranged in series. S8 and S9 are big-lawn spaces on both sides of the Tombstone Pavilion, consisting of platforms and slopes. S10 is a space consisting of three groups of stone steps and two platforms arranged in a series. Both sides of this space are enclosed by trees. In the middle of this space, two handrails are arranged vertically. S11 is a buffer platform space in front of the Sacrifice Hall. S12 and S13 are platform spaces on both sides of the Sacrifice Hall. In either of the spaces, one ornamental pillar and two rectangular tree pools are arranged. S11, S12, and S13 constitute the peripheral big-platform spaces of the Sacrifice Hall. S14 is the peripheral semispherical space of the Coffin Chamber. In terms of overall distribution, S1–S4 constitute the front half of the SYM, that is, the external area, whereas S5–S14 constitute the rear half of the SYM, that is, the internal area.

^① The function of the tomb passage is similar to that of the Sacred-Way in front of traditional tombs, i.e., it establishes a mood of solemnity and awe that is necessary for paying homage at a mausoleum. The SYM adopts such a guide-space form without setting any traditional carved stone statues on both sides of the passage to display the imperial majesty.

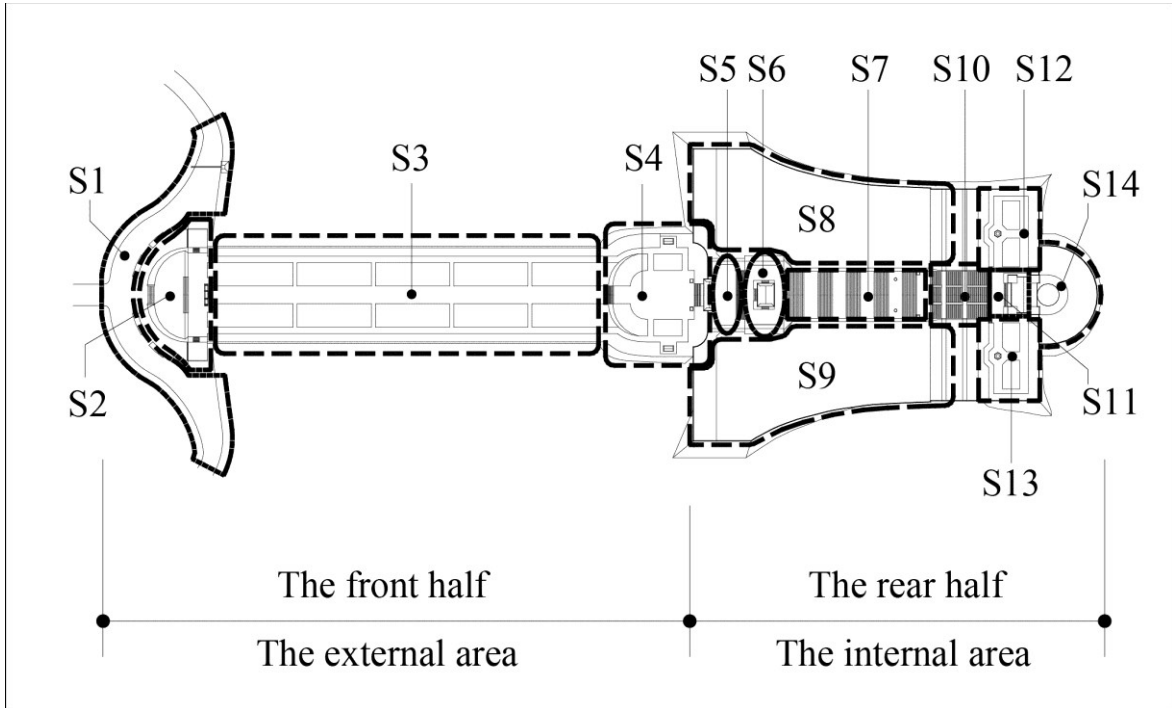


Figure -5-11 Distribution of 14 Sub-spaces

In the following sections, this paper specifically investigates and analyzes the spatial composition of the SYM from the perspective of “compositional elements,” “compositional forms,” and “vertical composition.”

5.4.1 Compositional Elements

The spatial environment of the SYM consists of architectural and external spaces. (see Table-5-1) Based on the morphological characteristics, the compositional elements of the external spaces can be classified into three-dimensional and plane elements. Three-dimensional elements form or separate spaces vertically, as well as determine the opening-closing degree of spaces according to different enclosure phases and heights. Plane elements form spaces according to different enclosure phases and heights. Plane elements form spaces through different materials and determine spatial shapes and sizes.^{10) 11)} Three-dimensional elements include walls, structures, railings, slopes, trees, shrubs (in natural forms), and shaped shrubs. *Structures* refer to traditional landscaping and ornamental elements, including stone lions, bronze dings^①, and ornamental columns (Figure-5-12). *Shaped shrubs* refer to spherical shrubs and pruned hedges, which are landscaping elements from Western countries. Plane

^① A ding is an ancient Chinese cauldron with three or four legs, a lid and two handles opposite each other.

elements include pavements and lawns. Lawn landscape is also a landscaping element introduced from Western countries.

As shown by Figure-5-10, in general, the planar layout of each spatial composition presents a strict symmetrical pattern. Pavements account for 31% of the total area of over 70 thousand square meters; lawns account for 29%; trees, buildings, and other three-dimensional domains account for 40%. Please refer to Table-5-2 for a description of the elements of the 14 spaces.

Three-dimensional elements: Arranged along the edge of the entire rear half of the mausoleum, the enclosing wall divides the entire mausoleum into an internal area and external area. The arrangement of the enclosed wall demonstrates the traditional introverted thinking characteristic of the Chinese.¹³⁾ All ten structures are traditional Chinese elements of spatial decoration. Two ones (stone lions) are arranged in front of the Mausoleum Gate, and another eight ones are arranged in the internal area of the mausoleum. The arrangement of structures emphasizes the importance of the internal area of the mausoleum. For safety reasons, railings are arranged in the middle of S10, as well as on the southern edges of S12 and S13. Stone steps and slopes are two forms of treatment that are based on the different heights of the two platforms. Because of the sloping terrain, many stone steps are used. Arranged along the central axis, the 14 groups of stone steps (totaling 392 stone steps) connect activity spaces with different heights into a whole. In particular, the arrangement of successive big stone steps in the two spaces of S7 and S10, constitute a unique landscaping effect—a capacious, gradually rising spatial sequence. All hard gardening landscapes (including stone steps and railings) and buildings are built of stones, serving the purpose of “a permanent memory”.⁹⁾ Slopes are arranged on both sides of the stone steps in the external area of the mausoleum, as well as between two platforms within the two big lawns. Different numbers of trees are planted in all spaces. Pruned hedges are mainly arranged on the edge of the big stone steps. Spherical shrubs are arranged on the lawn in S4 (Figure-5-13). Trees are planted in three ways: symmetrical plantation, linear plantation, and tree pool. Five pairs of rectangular tree-lined pools have been arranged symmetrically on both sides of the tomb passage. They belong to the regular landscapes modeled after the overly elongated scale of classical French gardens. Evergreen trees in the internal area are planted along the inner side of the enclosed wall, forming an enclosed space. Evergreen plants have been used predominantly to reflect the traditional Chinese memorial

meaning of “Be evergreen, be there forever!” for Dr. Sun and his spirit^①.

Plane elements: The total area of pavements is almost equal to that of lawns. However, pavements and lawns are distributed quite differently in each activity space. Lawns in the mausoleum include two large ones in the internal area of the mausoleum (S8 and S9), and small-sized regular lawns in S4, S12, S13, and S14 (Figure-5-14). Two open, oversized lawns express the vast garden style of Western countries, while these regular lawns express the regular garden style of Western countries (Figure-5-15). The arrangement of big lawns in S8 and S9 has met functionally the scale requirement of accommodating 50 thousand people during large-scale memorial ceremonies.⁹⁾ Pavements are arranged in other spaces to meet the requirement of daily activities, which involve many participants. These pavements come in the forms of roads, squares, or platforms.

In summary, the overall space of SYM does not rigidly adhere to inherent forms of traditional Chinese mausoleums. In order to meet the requirement of the height difference of the site, a lot of stone-steps are used, having become an important spatial composition element. In addition, stones and evergreen plants have not only created landscapes but also expressed a memorial appeal. On the other hand, spatial elements of the SYM include both elements of traditional Chinese style and elements of Western style, thus expressing the genre and characteristic of the combination of Chinese and Western elements, as well as embodying the collision and amalgamation of Chinese and Western landscaping cultures. In addition, in his early years, Dr. Sun received both a traditional Chinese education and a modern Western education, and gained quite a profound understanding of the Western world. To realize his ideal of founding a democratic republic, he resided in Japan, Europe, and the United States for a long time.¹⁴⁾ Well-versed in English, he is regarded as accomplished both in Chinese and Western learning. This combination of Oriental and Western culture is regarded as an important spiritual disposition of Dr. Sun. Obviously, such genre and characteristic of the combination of Chinese and Western elements embody the personal character of Dr. Sun.

^① In traditional Chinese culture, different plants are endowed with different emotional characteristics. For example, the “three companions of winter” refer to pine trees, bamboo, and yellow plum.



Bronze ding

Bronze ding

Stone lion

Stone lion

Ornamental column

Figure -5-12 Pictures of Some Structures

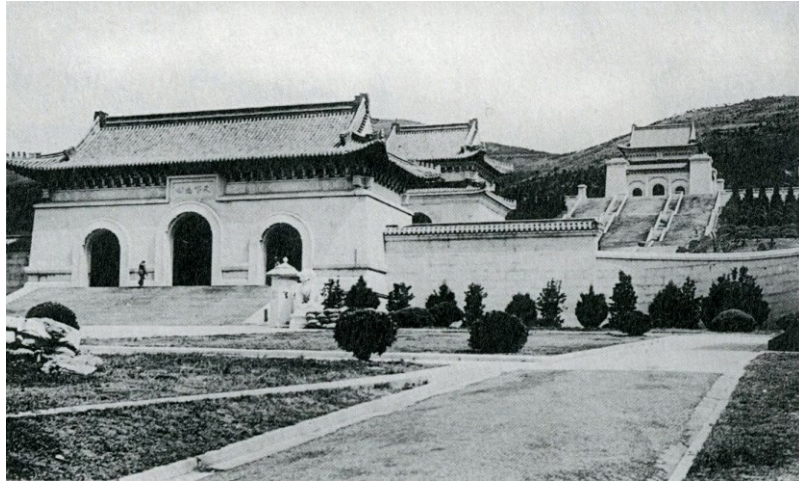


Figure -5-13 The Landscape of the Front of the Mausoleum Gate

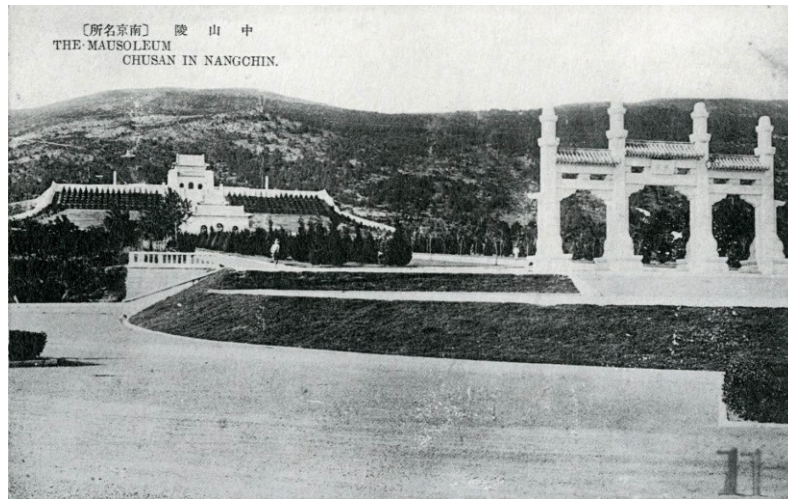


Figure -5-14 The Landscape of the Front of the Memorial Archway

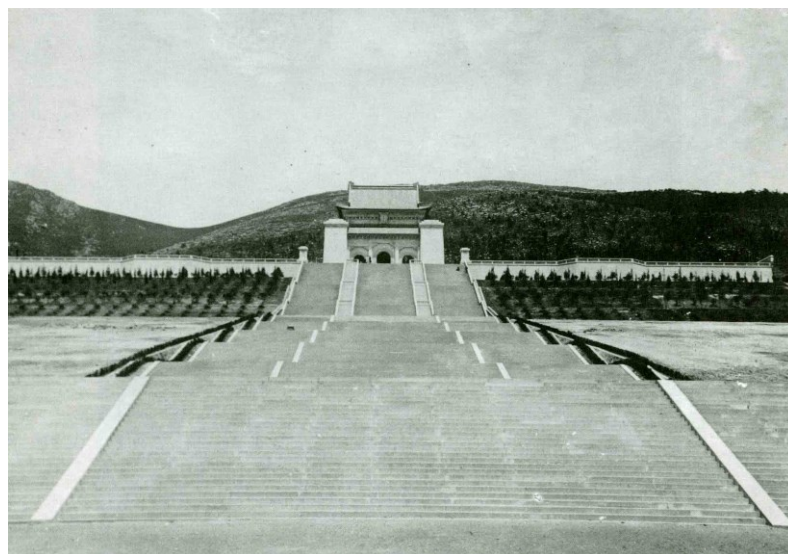


Figure -5-15 The Landscape of the Front of the Sacrifice Hall

5.4.2 Compositional Forms

Spatial compositional forms are based on the formal arrangements of elements and spatial scales, which jointly determine the nature of the spaces: openness, semiopenness, or enclosure. (see Table-5-1) The *formal arrangement of elements* refers to the arrangement relationship between the bottom interface consisting of plane elements and the vertical interface consisting of three-dimensional elements.¹⁰⁾ The fundamental formal arrangement forms include the “encircled form” (a1), “sandwiched form” (a2), “adjacent form” (a3), and “circular form” (a4), as shown in Table-5-1. The “encircled form” can also be subdivided into the “4-sides encircled form” (a1-1), “3-sides encircled form,” (a1-2) and “2-sides encircled form” (a1-3). “Circular form” can also be classified into “4-sides circular form” (a4-1), “3-sides circular form” (a4-2), and “2-sides circular form” (a4-3). In terms of the enclosure sense of spaces, the openness of the above-mentioned eight formal arrangements is as shown in Table-5-1. *Spatial scale* refers to the ratio between the width of a space and the height of its major enclosure interface.¹²⁾ Just as shown in Table-5-1, the difference of ratios reflects the difference of spatial openness. Scale statistics of the 14 activity spaces are shown in Table-5-2.

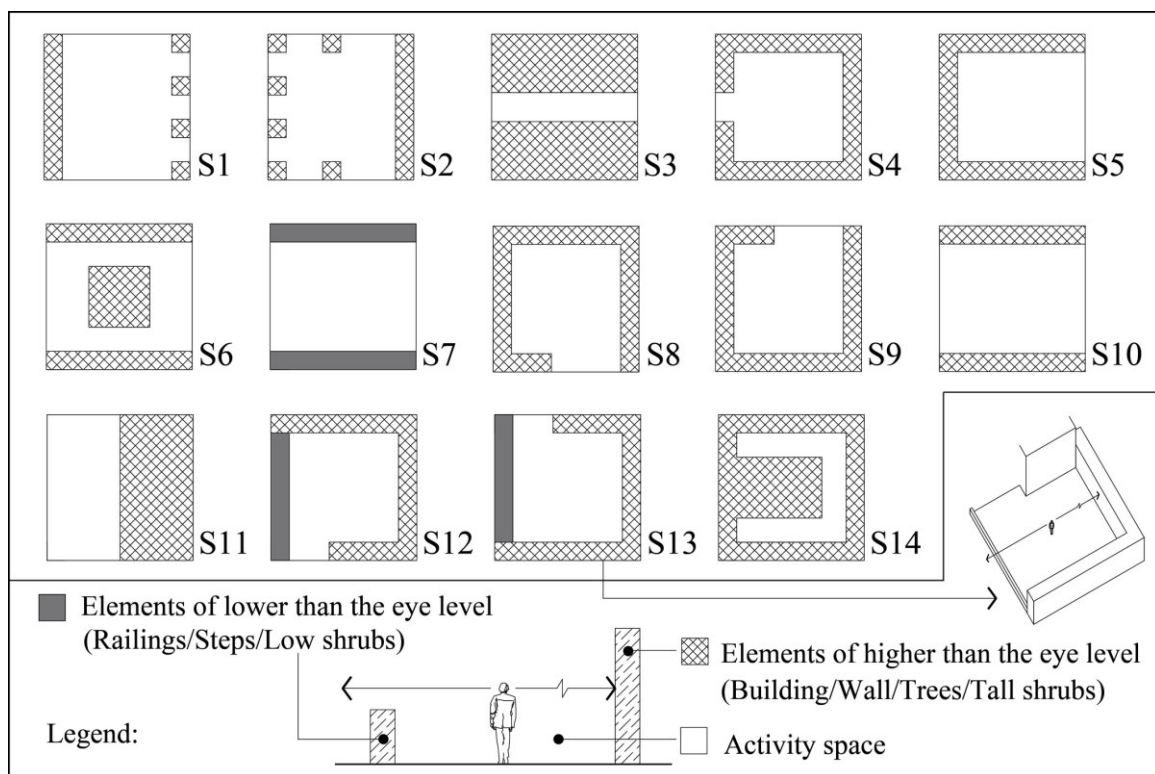
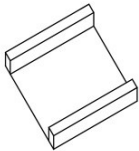
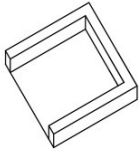
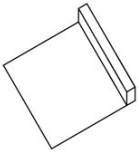
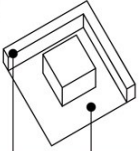


Figure -5-16 Formal Arrangements of the 14 Activity Space

According to the difference of varieties, forms, and heights of the elements of each spatial border, the formal arrangements of the 14 activity spaces are arranged into Figure-5-16. Based on the above-mentioned eight formal arrangements, classification analysis is conducted for the compositional forms of the 14 activity spaces. According to the result shown in Table-5-2, there are four types: “sandwiched type,” “3-sides encircled type,” “adjacent type,” and “circular module type.” In the following sections, specific investigation will be made into the spatial compositional characteristics and spatial feelings of four types, respectively.

Table-5-2 Statistics and Classification of Compositional Elements and Forms

NO.	Compositional Elements										Compositional Forms		Spatial feeling	Composition Patterns of Typed Spaces	
	Three-dimensional								Plane		Scale	Arrangement			
	Wall	Structure	Rail	Steps	Slope	Trees	Shrubs	Shaped-shrubs	Pavement	Lawn					
S1						●			●		r0	a2	f3	 Sandwiched	
S3			●			●	●	●	●		r0	a2	f3		
S7		●		●					●	●	r5	a2	f1		
S10			●	●		●	●	●	●		r4	a2	f1		
S8	●				●	●	●	●		●	r5	a1-2+a1-3	f1	 3-sided encircled	
S9	●			●	●	●	●		●		r5	a1-2+a1-3	f1		
S12	●	●	●			●	●		●	●	r2	a1-2+a1-3	f2		
S13	●	●	●			●	●		●	●	r2	a1-2+a1-3	f2	 Adjacent	
S4	●	●			●	●	●		●	●	r4	a1-2+a1-3	f1		
S5	●		●			●	●		●		r0	a1-2	f3		
S11		●							●	●	r0	a3	f1	 Circular module	
S2				●	●	●		●	●	●	r4	a3+a1-2	f1		
S6			●			●	●		●		r0	a4-1+a2	f2		
S14	●						●		●	●	r0	a4-2+a1-1	f3		
Sum.	7	5	6	3	4	11	10	8	12	7					Activity space Vertical boundaries
	r0: 6、 r2: 3、 r3: 2、 r5: 3														
	a1-1:1、 a1-2:7、 a1-3:5、 a2:5、 a3:2、 a4-1:1、 a4-2:1														
	f1 Open: 7、 f2 Semi-open: 3、 f3 Enclosed: 4														

Sandwiched type: On both sides of the activity spaces, there are enclosed three-dimensional elements. They constitute linear spaces in a definite direction, thus embodying emphasis on their traffic function. Specific spaces of this type include S1, S3, S7, and S10. S1 is the road in front of the mausoleum, whereas S3 is the passage to the tomb. Tall trees and canopies on both sides offer a strong sense of spatial enclosure and appear dark. Both S7 and S10 are the combination of big-sized successive stone steps and platforms. On both sides of S7 are low pruned hedges, with a very open sense of space. On both sides of S10 are arboreal groves, with an open sense of space.

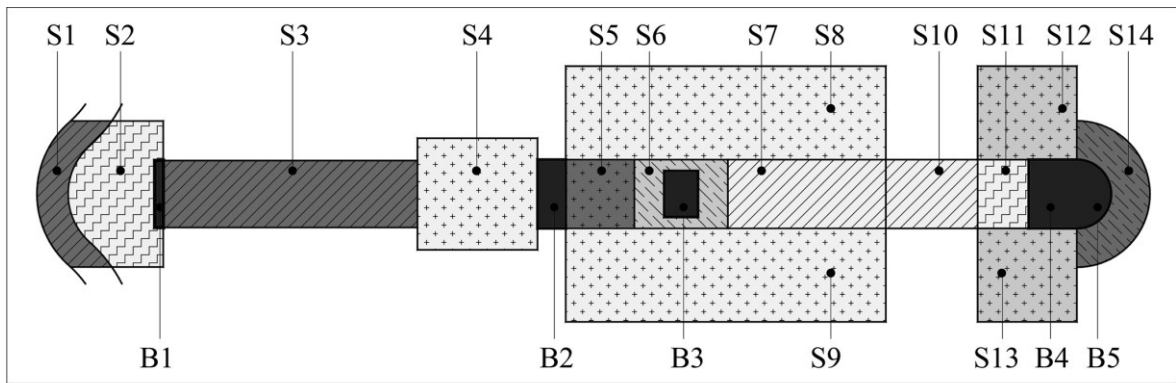
3-sides encircled type: One side of the activity space is open, whereas the other three sides are enclosed by successive three-dimensional elements. Owing to a strong sense of enclosure, each section of this space is an introversive square. Specific spaces of this type include S4, S5, S8, S9, S12, and S13. Although S8 and S9 are enclosed by the wall and groves on three sides, their sense of space is still very open because they are oversized. Owing to their moderate size, S12 and S13 offer an affectionate sense of space. They are quiet spaces for relaxation. S4 and S5 are the square space. Although S4 is more apt to the sense of enclosure, it appears very open because of its large size. Owing to its small size, S5 appears to have a strong sense of enclosure.

Adjacent type: One side of the activity space adjoins a building, while the other sides remain open, thus constituting a square in front of the building. As a square in front of the Sacrifice Hall, the size of S11 is small. However, thanks to its open vision, it is the best overlooking point. S2 is a square in front of the Memorial Archway. Because the four tree pools are arranged on the arc-shape outside of the square, this space offers a sense of enclosure. However, the space is large and therefore offers the sense of openness.

Circular module type: With a building as its center, an encircling external activity space comes into being. At the same time, the outside of the activity space has other forms of arrangement. A space of this type lays emphasis on the worshipping function of the building. S6 is a 4-sided circular space centering on the Tombstone Pavilion. Trees and railings on the eastern and western sides also enclose this space, thus presenting a sense of semiopenness. S14 is a 3-sided circular space centering on the Coffin Chamber, while the elevated tree-lined pools outside it also enclose this space, thus presenting a sense of full enclosure.

In summary, based on different formal arrangements of spatial elements, 14 activity spaces are expressed as four compositional types. However, the combination of different formal arrangement and scales determines the spatial feeling of each activity space (see Table-5-2). Compositional types and spatial

feelings of all spaces are superimposed so that Figure-5-17 can be produced. We can discover the following characteristics of spatial composition: (1) the pattern of spatial layout is expressed as the alternation between traffic-oriented spaces and gathering spaces. This design not only helps to concentrate and distribute many people, it also considers the pedestrian function, that is, the alteration between walking and staying in the overlong pedestrian system, which can help to alleviate fatigue. (2) The pattern of spatial layout can also be expressed as the alternation between open and bright spaces and closed and dark spaces. Through the contrast between brightness and darkness and between bigness and smallness, the “openness” of open spaces can be further reinforced. At the same time, the spatial sense of worshippers can also be enriched and reinforced.



Legend: Sandwiched type 3-sided encircled type Adjacent type Circular module type
 Open feeling Semi-open feeling Enclosed feeling Architectural space

Figure -5-17 Formal Features of Spatial Composition of the SYM

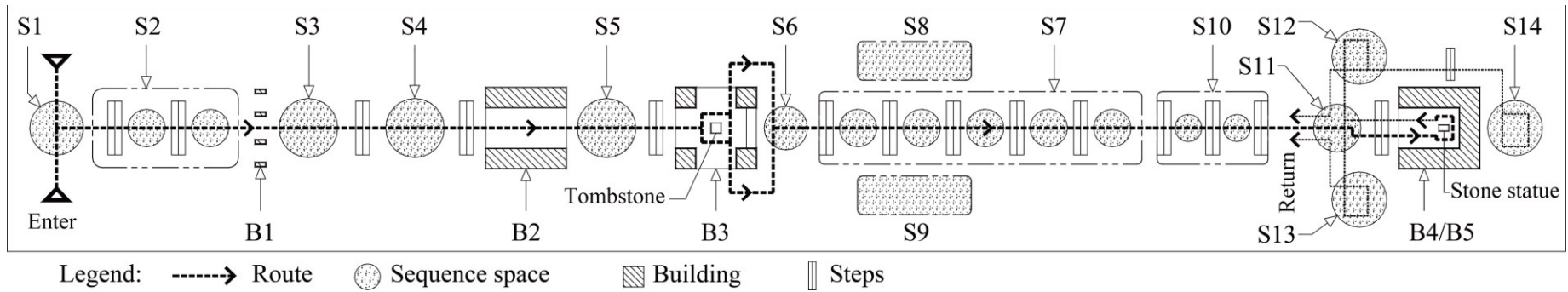


Figure -5-18 Spatial Sequence of the SYM

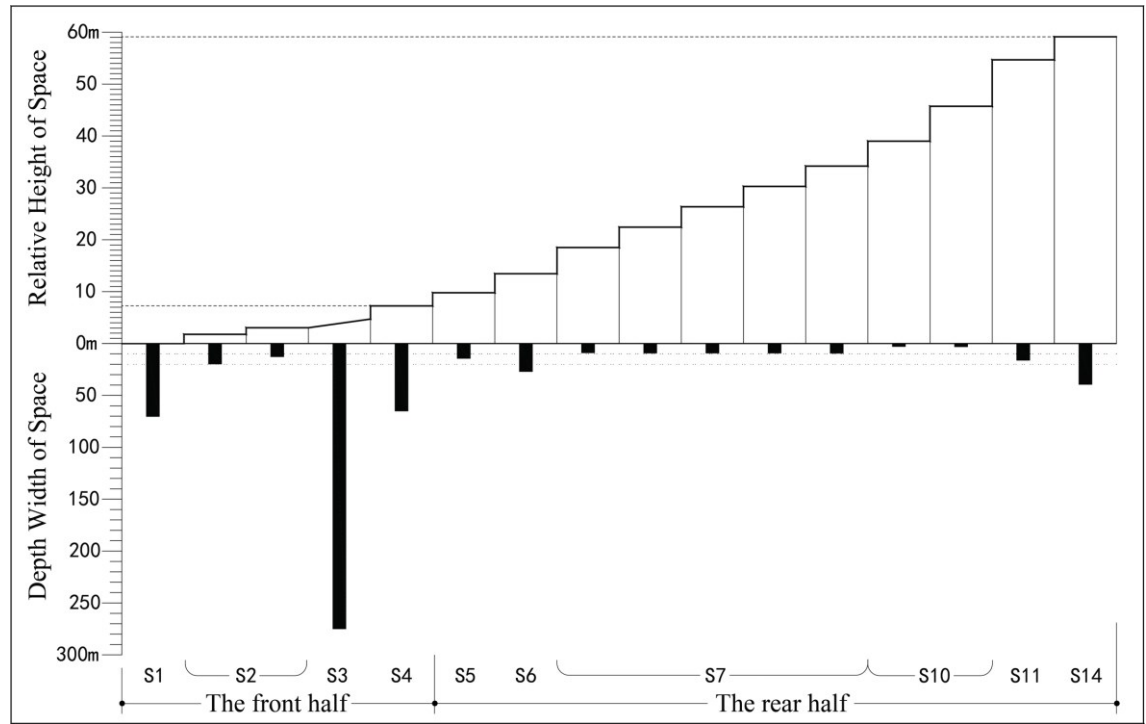


Figure -5-19 Depth Width and Relative Height of the Sequence Spaces

5.4.3 Vertical Composition

In general, in terms of vertical design, various spaces of the SYM are unfolded on the central axis, and elevated, layer by layer, according to the change of terrain, thus forming an ever-changing terraced structure of spatial sequence. As shown in Figure-5-18, the vertical division between spaces is achieved through the height change of stone steps and the separation of buildings. S2, S7, and S10 can also be vertically broken down into 2, 5, and 2 layers of subspaces, respectively.

From Figure-5-19 we can see that the elevation difference of the front half, whose depth width is about 400 m, is 4.7 m, but the elevation difference of the rear half, whose depth width is about 250 m, is 54.4 m. Such a design rises gradually at first and then more steeply. This effect establishes the supreme position as well as the grand momentum created by the front broad space. Thus the Sacrifice Hall (B4) which is in fact not really large appears to be a much more grand and spectacular place. Especially, the elevation difference of the large-stepped altar between B3 and B4 is about 38 m, and this large-stepped altar is divided into two parts, namely S7 and S10. As shown in Figure-5-20, the slope of all five segmented steps of S7 is 20°. Comparing with all the spaces, S7 is the broadest space and the best location for paying respect to B4. S10's three segmented steps, whose slope is 30°, are the steepest. The width of two platforms between steps is only 3 m, and the depth is the narrowest compared with that of all the spaces. Such a space, rising tier upon tier, constantly strengthens the mental atmosphere of the homage-payers before entering B4. In particular, in the space of S10, visitors need to cautiously look up to the Sacrifice Hall. (Figure-5-21) Since the Sacrifice Hall is the highest level site for visitors to worship Dr. Sun, the reinforcement and highlighting of the location of the Sacrifice Hall also allude to the lofty status of Dr. Sun.

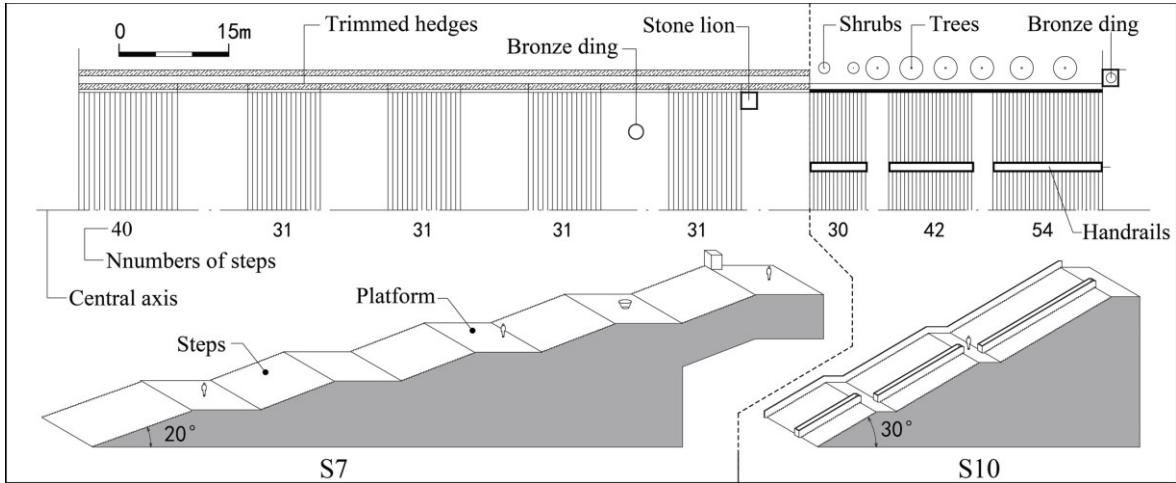


Figure -5-20 Plan and Axonometric Drawing of the Big Steps

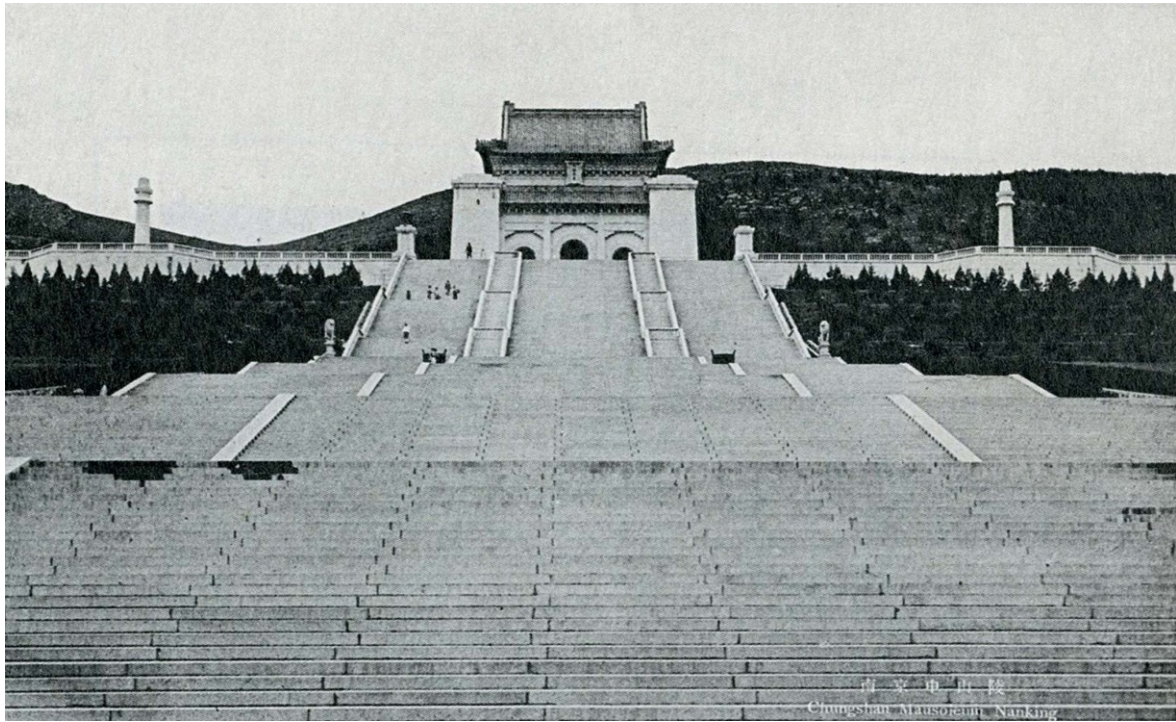


Figure -5-21 The Scenery of the Big Steps and the Sacrifice Hall

Moreover, in consideration of the unique vertical design of the SYM, this paper conducts specific analysis of the compositional characteristics of **the visual landscape of the SYM**, so as to further clarify the characteristics of its spatial composition. According to methods for the visual analysis of garden spaces used by Peng,¹³⁾ this paper chooses the travel route on the main axis as the benchmark, and selects the Sacrifice Hall (B4) as the key object of investigation. In addition, it sets up a viewpoint for each space from the entrance square to B4. In view of its overly elongated scale, two viewpoints are arranged for the tomb passage. A total of 10 viewpoints are selected (V1–V10) to conduct a visual analysis of the spatial landscapes of the SYM. (see Figure-5-10)

The analysis of visual landscapes of the SYM is shown in Figure-5-22. At V1, the field of vision is relatively open. Through B1, visitors can indistinctly see B4 in the distance. Here, the hint of the entrance space comes into being. Tall trees on both sides of the tomb passage constitute a strong spatial axis, directing the sight of worshipers to buildings in the distance. Here, the views converge. At V2, the entire vertical landscapes of B4 can be seen. Three buildings (B2, B3, and B4) are superimposed as a distant image. At V3, B2 gradually becomes a main scenic spot, and only the roof of B4 can be seen. On the square in front of B2, the field of vision becomes open again. At V4 and V5, B4 cannot be seen, with B2 and B3 constituting the main scenery of the spaces, respectively. V6 is a viewpoint in B3. Through framed sceneries formed by the door opening on the northern side of B3, big stone steps and B4 can be seen. After going out of B3, visitors would discover that their sight has suddenly become open and clear, reaching its climax. The oversized open space constituted by S7 to S10 gives full play to the grand vigor of the mausoleum. V7 and V8 offer two desirable viewpoints for worshipping B4. The former lays emphasis on the grand scene, while the latter pays close attention to B4 itself. All vertical viewpoints of V1 to V8 are upward ones. These upward viewpoints can give the effect of towering and grand landscapes. Therefore, they are often applied to large traditional imperial gardens.¹³⁾ On the contrary, the platform (S11) in front of B4 offers the best downward viewpoint (V9), an open field of vision, and a commanding view. At the same time, B3 and B4 also visually constitute the effect of opposite sceneries. Spaces on both sides of B4 (S12 and S13) and the external space of B5 (S14), are provided for worshippers to relax themselves. They represent the end of the entire travel route. At V10, the ornamental column is the main scenery, and the sight is relatively convergent.

As can be seen from the above analysis, along the homage-paying route, the main scenery changes continuously (see pictures in Figure-5-22). This has

produced the sightseeing effect of “Each movement of step will bring different sceneries” stressed by classic Chinese gardens. Moreover, the spatial effect of “the hint of B1→the guidance of the tomb passage→the restricted scenery of B2→the obstructive scenery of B3→finally becoming extensive all of a sudden” has come into being to highlight the core status of B4. Such a sequence of spaces has further shown the features of a four-segment spatial structure: starting section (S1 and S2), guiding section (S3–S6), climax section (S7–S11), and ending section (S12–S14).

In summary, with the help of this pattern of central-axis symmetry, the combination of Chinese and Western elements, the vertical treatment of layer-upon-layer elevation, and the size and brightness contrast among different spaces, the spatial environment of the SYM is obviously different from that of any previous traditional mausoleum—mysterious, sequestered, and forbidding (worshipping by common folks is strictly forbidden)—for example, the Ming Xiaoling Mausoleum in Nanjing. The SYM has a memorial space similar to that of Western memorials, for example, the Lincoln Memorial^①, thus demonstrating open and modern characteristics.¹⁵⁾ Therefore, it would not be too much to say that the spatial design of the SYM has not only inaugurated a brand-new modern Chinese-style memorial space, but also successfully represented the great and amiable image of Dr. Sun.

^① While designing B4 of SYM, Lv Yanzhi made reference to the architectural space of Lincoln Memorial in Washington, USA. Refer to Lv, Y. (1928) Memorials to Dr. Sun Yat-sen in Nanking and Canton. *China Weekly Review*, Oct. 10, 70~72.

5.5 Comprehensive Consideration

The Chinese had a long tradition of paying tributes to the heaven and ancestors, and they carefully attend to the funeral rites of parents. Thus, they have been advocating an elaborate funeral. If a person is very honorable with a high social status when he/she is alive, he/she would absolutely enjoy a most splendid cemetery after his/her death; and people can easily imagine the grandeur of the cemeteries of emperors, nobilities and officials. For building a cemetery, it's important to carefully choose the right place with the right landscape. Tree plantation and architecture building in a cemetery must undergo strict planning. As the planning of a cemetery is wholly or mainly for creating a memorial atmosphere instead of sightseeing or relaxation, it should reflect the idea of pursuing good fortune and avoiding disasters, as well as heaven-human interaction. It could thus be seen that ancient cemetery and classical garden lie in two different scopes. However, with the development of modern society, as well as the appearance and evolvement of parks, cemetery has gradually turned into public and open space. Sun Yat-sen Mausoleum must be the best representative.

The mausoleums of ancient Chinese emperors had lasted for more than 2,000 years since the practice was started in the Warring States Period till Ming and Qing Dynasties, thus a complete and complicated system was formed. From the mausoleum of the First Qin Emperor to the Qianling Mausoleum of Tang Dynasty, then to Ming Dynasty Tombs of its emperors: these imperial mausoleums featuring different eras but an identical theme shape and present the ancient mausoleum system unique to China. Take the example of the Ming Xiaoling Mausoleum (Figure-5-23), located in Nanjing. It features a mausoleum system of “court in the front and bedchamber at the back” and three areas of yards both in the front and at the back. That reflects the ritual system and highlights the imperial power and politics. The Ming Xiaoling Mausoleum is so far one of the largest-scale ancient mausoleums of emperors, whose mausoleum system followed the rule of “building tombs along mountains” handed down from Tang and Song Dynasties and those before them; but the square tomb was altered into Round Altar, thus initiating the basic pattern of “square in the front and round at the back”. The building rule of emperor's mausoleum of the Ming Xiaoling Mausoleum had been observed in the building of more than 20 emperor's mausoleums in over 500 years of Ming and Qing Dynasties, thus guaranteeing the tomb a special position in the mausoleum development history

of China. Therefore, the tomb can be fairly claimed the No.1 Imperial Mausoleum in China.

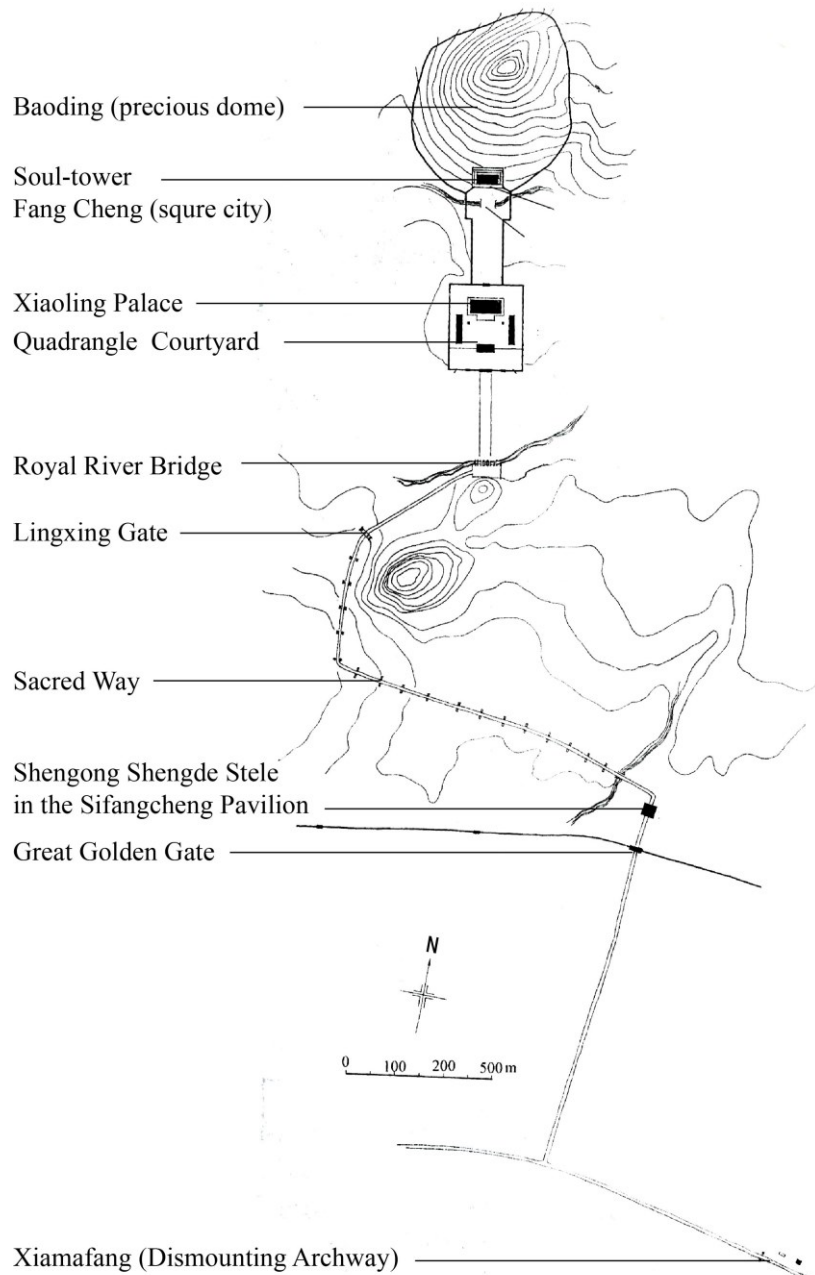


Figure-5-23 The Plan of the Ming Xiaoling Mausoleum

The SYM is located in the east side of the Ming Xiaoling Mausoleum, so no doubt, the layout of the former would be impacted by ancient mausoleums. Judging from its construction and space layout, the SYM applied the components of traditional mausoleums but simplified them. (Figure-5-24) Memorial archway, tombstone pavilion, mausoleum gate, soul-tower and Fang Cheng, and Baoding

(precious dome):^① all these scattered and small-sized single buildings were connected through long tomb passages, large areas of afforestation and broad stone steps, into a whole of a large scale.

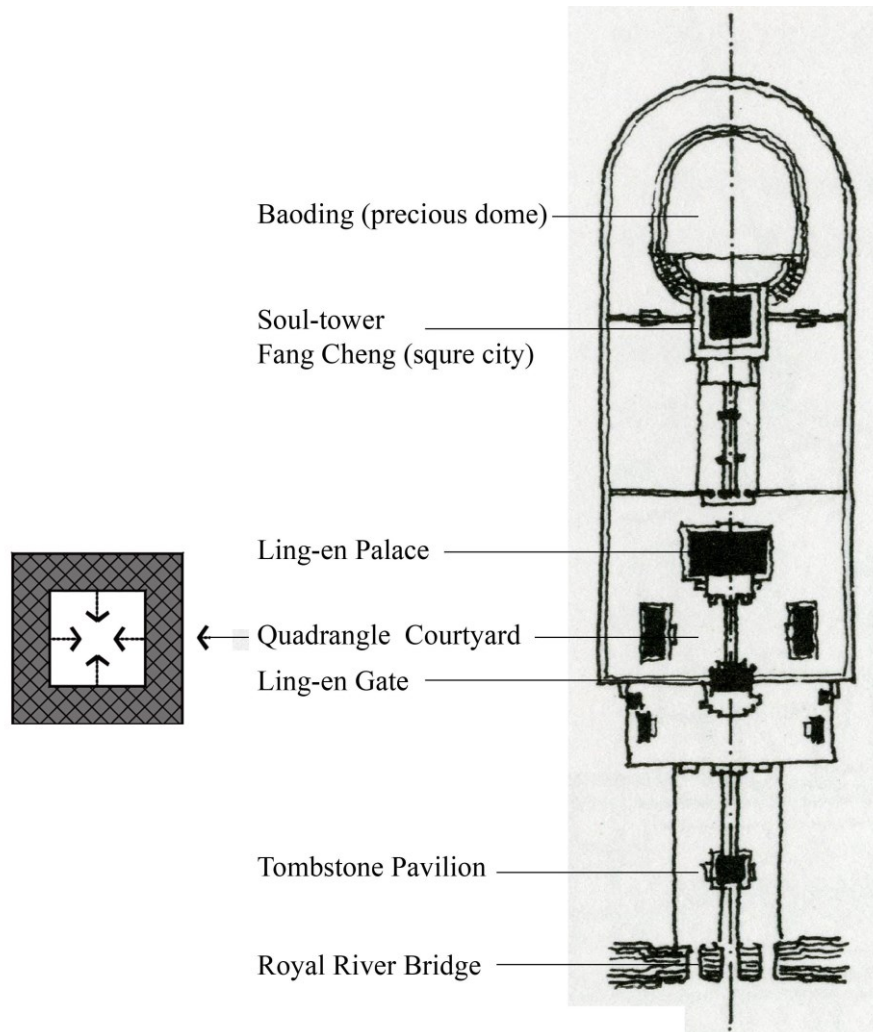


Figure -5-24 The Spatial Pattern of Mausoleums

On the other hand, the designer of the SYM, Lv Yanzhi, lived in Paris in his childhood then went to high school in Beijing. In 1913 he went for further study in Cornell University, and he was awarded Bachelor's Degree in Dec. 1918. Later he went to New York to work as draftsman in Murphy and Dana Architects, a firm run by Henry K. Murphy. At that time, Murphy was assuming the design of Ginling College, whose campus building and environment typically presented the combination of Chinese and Western styles (refer to Chapter 4 for details).

^① The Soul Tower and Fang Cheng is a very impressive building which guards the resting place of Empress Zhu Di of the Ming Dynasty, whose tomb lies beneath a small hill called Baoding next to the Soul Tower. Future emperors of the Ming Dynasty will come here to pay respect to their ancestor Emperor Zhu Di.

The architectural features of the SYM were not included in this research, but we can still find out the origin of the inspiration to Lv's design from the design of architectural space. For example, the design of Sacrifice Hall included a rectangular plane and two lines of colonnades, as well as the sitting statue in the altar: all these seemed to imitate the space layout of Lincoln Memorial. About this, Lv Yanzhi once uttered, "The bronze statue of Sun Yat-sen was placed in the Sacrifice Hall, like Lincoln Memorial in Washington." The design of lower coffin pit in the coffin chamber made it possible for visitors to walk around the chamber and appreciate the sarcophagus and recumbent statue of Sun Yat-sen, "like Grant's Tomb in New York and Napoleon's Tomb in Paris".¹⁶⁾ Besides, buildings in the SYM also integrated the composition principle of ideal proportion from western classical architecture, like in the design of the Sacrifice Hall's façade.³⁾ It could be summarized from the descriptions above that the design of the SYM imitated excellent examples of European and American public buildings, integrating ideas of western architecture into buildings of Chinese style. Just as the analysis above, in addition to buildings, regularized boulevards, symmetrical green belts and reshaping plants all demonstrated the garden style of European geometry. The huge platform and grassland provided vast space for public rally and celebrations. Such "open memorial" was obviously originated from the outer space design of western public buildings—open square and park culture, like the outer space of Lincoln Memorial, Grant's Tomb and Napoleon's Tomb. (Figure-5-25)



Figure -5-25 The Pictures of Lincoln Memorial

By imitating and learning from mausoleum design in China and the US, the overall space of the SYM finally achieved a magnificent and wide effect of solemnity without severity, sublimity without mystery, and exactly expressed the special spirit and style required in the mausoleum of a great man who made so incredible contributions to his homeland.

5.6 Summary

Based on the above-mentioned investigation and analysis, we arrived at the following conclusions on the spatial composition and characteristics of the SYM during the period of the ROC:

(1) The spatial layout of the SYM does not rigidly adhere to the inherent form of traditional tombs. It has not only selected elements of traditional tombs for the sake of simplification, but it also incorporated the treatment techniques of Western gardens and memorial spaces. Therefore, it has a very vivid non-traditional feature and exhibits a modern feeling.

(2) The characteristics of “the combination of Chinese and Western elements” demonstrated by the spatial composition of the SYM accurately reflect the personal spirit, character, and style of Dr. Sun.

(3) Through the alternate arrangement of traffic-oriented spaces and square-oriented spaces of different forms and scales, the spatial environment of the SYM not only considers the pedestrian condition of worshipers, functionally, it also meets the demands of holding large-scale ceremonies.

(4) Through the contraction-release treatment of spaces, vertical and upward layer-upon-layer progression, and visual restraint and liberalization, the sequential spatial design of the SYM enables worshippers to feel abundant spatial changes. Moreover, the grand vigor it has created also conforms to the public imagination of Dr. Sun as one of the great men of his generation.

The research scope of this chapter is limited to the SYM itself. In the future, the authors will analyze and investigate its auxiliary buildings (e.g., the Bandstand) and the characteristics of their spatial composition, so as to conduct a more comprehensive interpretation and clarification of the overall styles and features of the entire mausoleum park.

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Chapter 6 Conclusions

Based on the historical background of the ROC, this paper makes Nanjing its research target and carries out in-depth analysis and study as to the constitutive characteristics of the space environment in the most representative public courtyards. The research findings indicated that the public courtyard of the ROC in Nanjing was impacted by western garden culture, leading to an obvious style of Western gardens, that is, Western style or integration of Western and Chinese styles, which is the so-called “ROC style”. So what are the characteristics of public courtyards in the ROC? Based on analysis and study of the chapters abovementioned, the following summaries can be concluded.

6.1 Summaries of Chapters 3-5

The ROC buildings of Nanjing, especially public buildings, have been regarded as excellent model in modern Chinese buildings due to their high grade, taste and large quantity, and the characteristics of integrating Chinese and Western styles. The thesis has selected the most representative types of buildings from such public buildings, namely government buildings, university buildings and memorial buildings. And the thesis has examined and analyzed the external space of the aforesaid buildings from 3 research perspectives based on the different natures and characteristics of the research objects, i.e. the thesis studies the external space of all the government buildings, the spatial composition of university campuses, and the spatial composition of the Sun Yat-sen mausoleum. The specific conclusions of relevant chapters are sorted as follows:

Chapter 3 took government buildings, the most representative buildings in ROC buildings, as the research objects, and finally determined 24 ROC government organs as the research objects based on the historical background of the ROC. And it confirmed and mapped the original forms of the external space of the 24 public buildings based on literature investigation and site survey. In addition, it determined 3 analysis items such as “composition elements”, “composition forms” and “approach lines” based on the current conditions and survey results, and examined and classified the characteristics of the external space of the 24 buildings as well as analyzed the reason for their unique cultural characteristics from the perspective of social and cultural background. Analytical results show that as compared to the same type of traditional spaces, the external space of Nanjing government buildings features symmetrical, regular, open, and sparse spaces of Western classical gardens,

wherein the external space is designed around the axis of the building and the dimensional and plane elements are arranged symmetrically. This spatial pattern is mainly characterized by “a front garden with a rear building.” Specific as the follows:

(1) The overall style of the Nanjing government buildings of the ROC and their external space represent mainly the western style and a combination of Chinese and Western, which served not only as office space for various government authorities, but also provide a physical expression of the political meaning of the democratic republic from the West.

(2) The external space patterns of Nanjing government buildings of the ROC extensively use symmetrical structures, whose composition elements commonly feature the western style lawn and flat terrain as well as present the emergence of semi-open style fencing walls as the most prominent wall style. All these factors reflect the social characteristics of the transition from the old towards the new era—containing unique cultural characteristics based on a combination of Chinese and Western styles.

(3) The composition relationship between Nanjing government buildings of the ROC and their external space are mainly consist of the adjacent type and the circular type, though primarily the former. The external space pattern is arranged mainly as “a front garden with a rear building” to provide an open sense of the external space.

(4) The entrance gate is located to form a strict alignment relationship with the building, thus creating an approach space to divide the external space. There are two main types of external space layout, the one-division pattern and the two-division pattern, and the latter was the primary choice.

Chapter 4 took university buildings, the most representative buildings in cultural buildings, as the research objects, and carried out research centering on 3 lines such as “entrance space”, “main-square space” and “subsidiary space”. It determined 3 analysis items such as “composition elements”, “spatial forms” and “flow lines” based on the current conditions and previous research. Moreover, it examined and analyzed the spatial constitutive characteristics of 3 college campuses based on the first-handed data and survey results such as plane drawings and photos etc., and sufficient survey of the times and social background. Finally, it made overall examination of the similarities and differences in the spatial constitutive characteristics of 3 university campuses from the perspective of cultural aspect and social background. According to the research findings, the key composition features of each of these three universities are “principal axis + stub-end buildings + main square in the style

of three-sided courtyard + lawn space” in the Western style, the separation of teaching space and dormitory space, and the setting of large-sized sport spaces. In addition, based on the Chinese-style treatment of campus buildings and spaces, church universities present a style combining both Chinese and Western elements for the “localized” missionary purpose. In contrast, campus spaces of national universities assume a “completely Westernized” style different from the traditional one, so as to convey the brand-new administrative philosophy of the National Government. Based on the above-mentioned investigation and research, we can conclude the following characteristics:

(1) In terms of the elements of campus spaces, the large-acreage open lawn landscape and cross-shaped orthogonal road-grids constitute the planar characteristic of campuses, thereby forming the keynote of Western style.

(2) In terms of spatial layout and forms, there is a controlling principal axis which commands all buildings and spaces on the campus. In addition, the setting of main buildings in the principal-axis and stub-end style expresses the collision and integration of Chinese and Western culture.

(3) An open space of three-sided courtyard has emerged on the basis of the enclosure of buildings. As the main space for public communication among students and teachers, this space embodies a kind of absorption of the planning philosophy of new-style American universities.

(4) In terms of the functional layout of campuses, dorms and classrooms are separated from each other, and a sport space is newly added, embodying a kind of absorption of the culture of Western modern universities.

(5) Different education-offering entities have different requirements for the spatial construction of campus environment. The composition of campus spaces not only represents physical composition, but also reflects the “political” or “religious” appeal of builders.

Chapter 5 took the Sun Yat-sen mausoleum, the most representative building in memorial buildings, and the most influential one in all the ROC buildings, as the research object, and made sufficient historical verification and site survey of the spatial composition of the Sun Yat-sen mausoleum based on plane drawings, historical photos and results of literature investigation. Moreover, it established 3 analysis items based on survey results and site conditions, i.e. “composition elements”, “composition forms” and “vertical composition”. And it divided the whole space into 14 subspaces based on vertical division of the three-dimensional elements, and examined and analyzed such subspaces based on the times background of the ROC. Finally, it grasped the general constitutive characteristics. The results of this research indicate that, in terms

of compositional elements, these spaces combine Chinese and Western styles. In terms of overall layout, these spaces present an alternating arrangement between traffic-oriented spaces and gathering spaces, as well as between open and bright spaces and closed and dark spaces. In terms of vertical design and visual landscape, these spaces demonstrate a spatial sequential structure of layer-upon-layer progression and step-by-step scenic changes. The above-mentioned characteristics reflect the combination of Chinese and Western styles and grand openness, as well as the extraordinary location of the Sacrifice Hall, which keenly represents the personal spirit, disposition, identity, and status of Dr. Sun. Based on the above-mentioned analysis and investigation, we arrived at the following conclusions:

(1) The spatial layout of the SYM does not rigidly adhere to the inherent form of traditional tombs. It has not only selected elements of traditional tombs for the sake of simplification, but it also incorporated the treatment techniques of Western gardens and memorial spaces. Therefore, it has a very vivid non-traditional feature and exhibits a modern feeling.

(2) The characteristics of “the combination of Chinese and Western elements” demonstrated by the spatial composition of the SYM accurately reflect the personal spirit, character, and style of Dr. Sun.

(3) Through the alternate arrangement of traffic-oriented spaces and square-oriented spaces of different forms and scales, the spatial environment of the SYM not only considers the pedestrian condition of worshipers, functionally, it also meets the demands of holding large-scale ceremonies.

(4) Through the contraction-release treatment of spaces, vertical and upward layer-upon-layer progression, and visual restraint and liberalization, the sequential spatial design of the SYM enables worshippers to feel abundant spatial changes. Moreover, the grand vigor it has created also conforms to the public imagination of Dr. Sun as one of the great men of his generation.

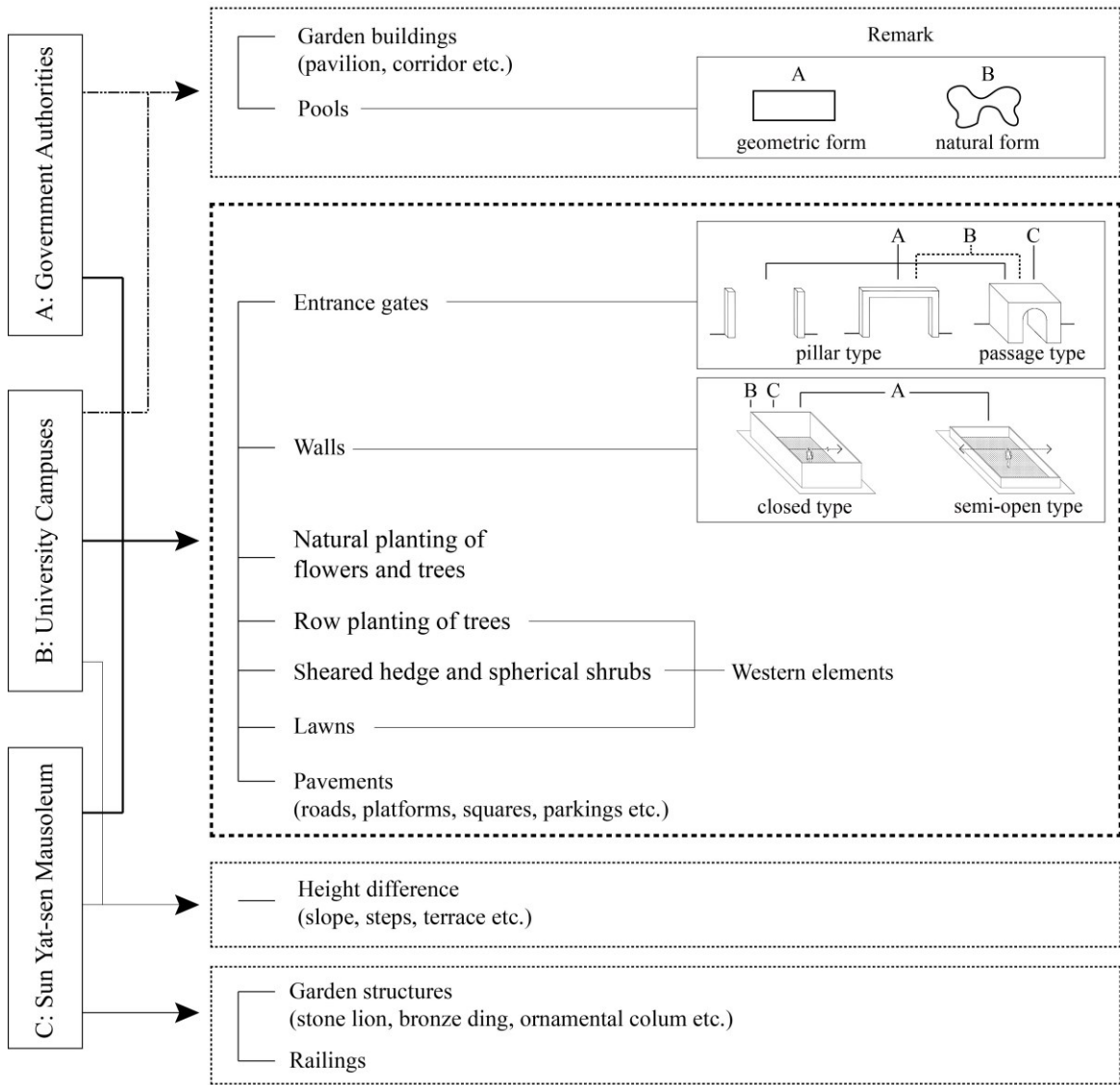


Figure -6-1 Characteristics of Composition Elements of External Space

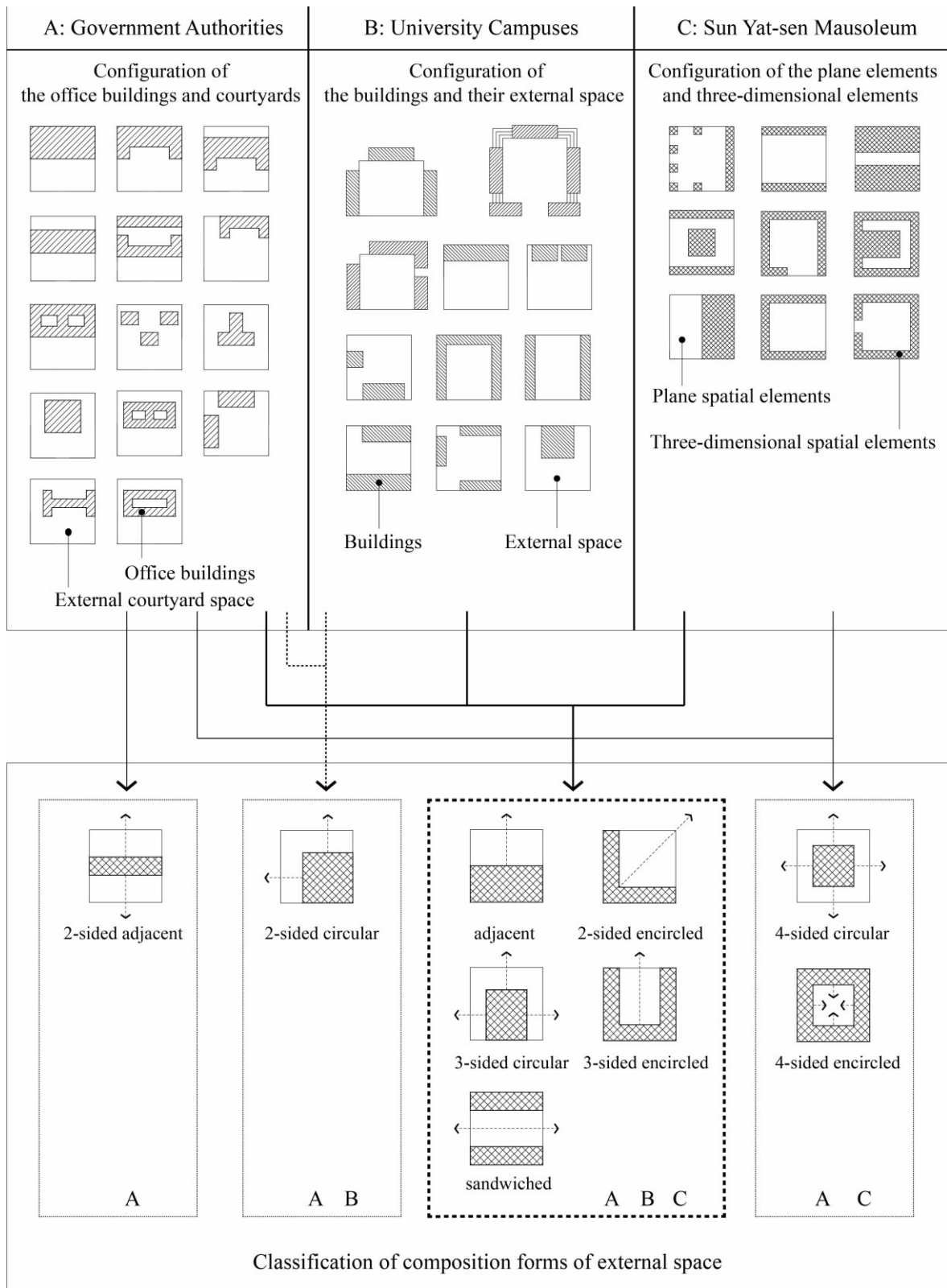


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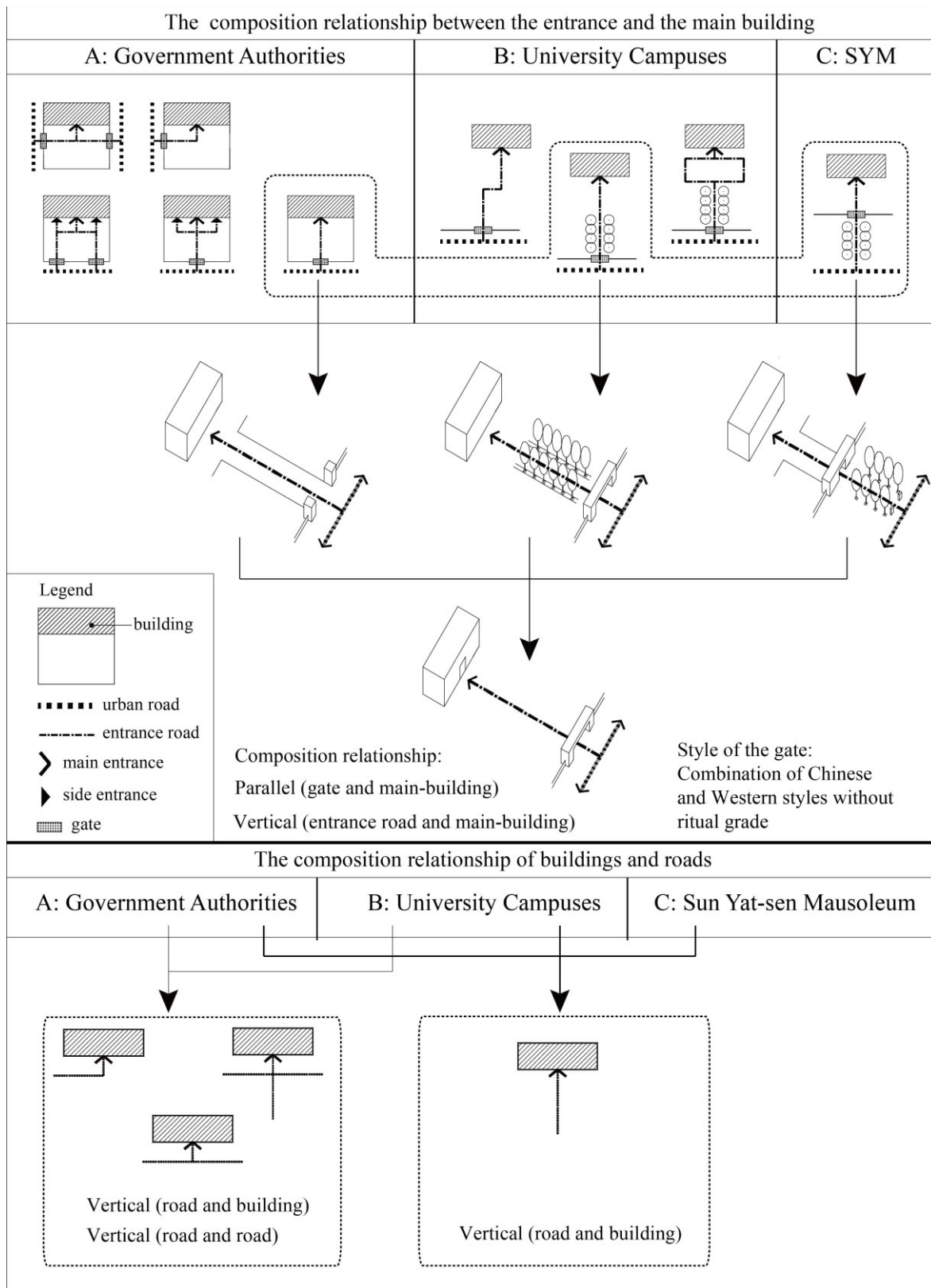


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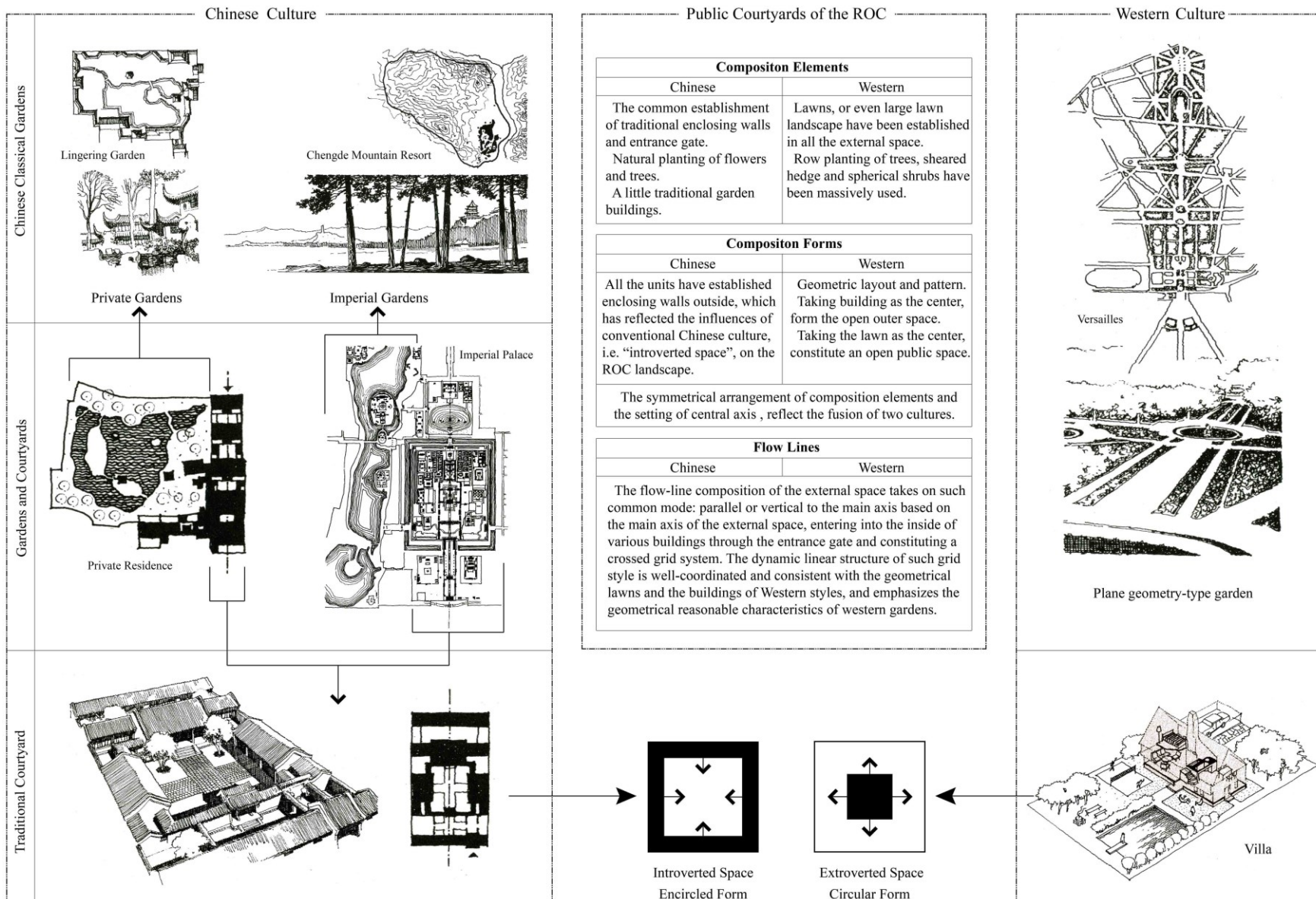


Figure-6-4 Analysis on the Characteristics of Combined Chinese and Western Styles

6.2 Discussions and Conclusions

6.2.1 Characteristics of Traditional Gardens

Gardens of the ROC are an important component of Chinese gardens, especially modern gardens. If its development is placed in the whole history of gardens for closer look, we can better capture the characteristics of such an era. Therefore, before reaching a definite conclusion, it's necessary to have a brief survey as to the general situation of Chinese gardens.

The history of classical gardens in China was generally considered to be the period from late slavery society in 11 century BC to the breakup of feudal society in late 19th century. Chinese classical gardens were products of feudalistic agricultural economy and centralization of state power, so that agricultural economy and power centralization became the gene that determined the nature of classical gardens. Meanwhile, Chinese classical gardens are a component of feudalistic culture; as a form of culture, the gardens must be impacted by many other forms of feudalistic culture at different degrees. Among all Chinese classic gardens, two of the most mature and individualized types were imperial garden and private garden. Both the ideas and techniques of gardening in them could well represent the brilliant achievements of Chinese classical gardens. At a later period, the imperial garden in the north and private garden in southern Yangtze River gradually developed into two primes in Northern and Southern China. (Figure-6-4)

Imperial garden was owned by the emperor and his family, and there can be more types based on different usages of them. Private garden was owned by the noble, bureaucrats and government officials. Private garden was relative to the imperial garden. Feudalistic law and discipline rites set limitations to the life and consumption methods of folks to discriminate between superiors and inferiors. Those who violated the rites would be harshly punished. Also, as a lifestyle, enjoyment of gardens must be restricted by feudalistic rites. Therefore, private garden showed great differences from imperial garden in aspects of content and form. Besides, there're types of garden like temple garden, mausoleum, and some garden types that are neither a principal part not mainstream, like Yashu garden, academy garden, ancestral temple garden and guild hall garden. They are in smaller numbers and mostly similar to private garden. (Figure-1-1 and Figure-6-4)

The characteristics of Chinese classical garden could be summarized in the

following four aspects: (1) Root in nature and perfection from nature, namely, to convey information of nature and ecology through typifying and abstracting the nature and its components; (2) combination of architectural beauty and natural beauty, namely, to strive to integrate the three gardening elements of mountain, water and plants in a series of landscape scenes no matter how many the buildings are and what their nature and function are; (3) interest of poetry and painting, namely, to implant poem and painting art into garden art by comprehensively applying kinds of art, so that the garden would embody full fund of poem and painting from the whole to parts; (4) Artistic conception (Emotional environment). Emotional refers to subjective ideas and feelings, while environment means the objective life and scenery. Artistic conception grows out of the combination of feelings and scenery during artistic creation; that is, the creator will integrate his/her feelings and ideas into the life and landscapes, so as to arouse similar response and association in the appreciator.

On the other hand, as the medium stage during the evolvement from ancient garden to contemporary garden, modern garden showed its unique charm different from classical garden. The modern history of China (1840-1949) was a history of fighting a semi-feudal and semi-colonial society. During the 109 years, there were colonization of imperialism, the rise of westernization movement, and the promotion of New Democracy Movement and New Culture Movement. The period not only ended the last feudalistic dynasty of China—Qing Dynasty, but served as an entrance to the republic and democracy, then to the birth of People's ROC. During that period, the Chinese suffered greatly from feudalism and colonialism, but Marxism-Leninism, together with bourgeois democracy that advocates freedom, justice, universal love and stresses democracy, civil rights and people's livelihood, sprang up in the turbulent days, and grew up to boost social progress. Harbor cities enjoyed fast development at this period. A lot of foreign-style streets, buildings and gardens showed up in Shanghai, Guangzhou, Tianjin, Qingdao, Dalian and Xiamen; while major cities like Beijing, Shanghai and Nanjing were giving birth to new ideas, new thoughts and new cultures. In view of the uniqueness and complexity of this period, we can divide it into late Qing Dynasty period before the Revolution of 1911 and ROC period after the Revolution. Historically viewing the development of modern gardens, we can easily find two important and evident features of urban gardens at this period: firstly, concessions and westernization movement encouraged the theory and practice of western urban planning, architecture and garden to be integrated in China, thus giving rise to a lot of western-style buildings, courtyards and gardens combining Chinese and Western elements,

whose layout, architectural style and artistic features bore an obvious flavor of the ROC. Secondly, urban parks began to appear in batches. The park, as the space for public entertainment activities, was a product of the introduction of modern western civilization. It firstly showed up in concessions of Shanghai and Tianjin, then spread to Chinese communities gradually. By the time of the ROC, it had started to develop from coastal open ports to inland towns, and gradually become a major site for relaxation and entertainment.

6.2.2 Characteristics of External Spaces of Public Architectures

The ROC buildings and courtyards thereof in Nanjing are an important organic part of the cultural personality of the city. Properly handling the relation between protection and utilization is of great significances for highlighting the cultural characteristics of Nanjing, and promoting modern construction of the city as well. Thus we shall fully understand their value, and protect and use them in a scientific and reasonable way, which is the original intention of the thesis. The following conclusions can be drawn on the constitutive characteristics of the external space of the public buildings of the ROC in Nanjing through the aforesaid research and discussion. (Figure-6-1~6-3)

(1) Characteristics of Composition Elements of External Space (Figure-6-1)

Government organs, university campuses and Sun Yat-sen Mausoleum have some common characteristics in the composition elements of external space: (i) extensive establishment of enclosing walls. All the units have established enclosing walls outside. Except for the enclosing walls of some government organs that are relatively transparent, the enclosing walls of other organs are sealed enclosure higher than the eyesight, which has not only reflected the influences of conventional Chinese culture, i.e. “introverted space”, on the ROC gardens, but also showed breakthrough therein. (ii) Lawns, or even large lawn landscape have been established in all the external space. And the introduction of Western gardening element has greatly upgraded the openness of external space. (iii) Traditional gardening elements, for example, pavilion, corridor, artificial rockery and rockery settings etc., are rarely used. Moreover, European gardening elements such as sheared hedge and spherical shrubs etc. have been massively used. (iv) The structural form of the spatial venue is mainly square, and a few circles. All the composition elements such as buildings, trees, environment decoration, and roads etc. are based on the main axis and are symmetric in spatial layout.

On the other hand, there are some respective characteristics in 3 kinds of external space due to differences of users. The external space of government buildings and the campus space of National Central University are basically symmetrical Western lawn landscape, which reflect the orientation toward Western styles of the garden space sponsored and constructed by the ROC government to publicize its political ideology. The other two university campuses space constructed by the Western churches boast open Western lawn landscape, and establishment or interspersed of traditional Chinese gardening elements, thus taking on the compositional characteristics integrating Chinese and Western styles for religious localization. To embody the spirit and mettle of “integrating both Chinese and Western studies” of Sun Yat-sen, the Sun Yat-sen Mausoleum is interspersed with small conventional Chinese environment decorations in the overall Western garden space. It can be seen that different building subjects have different construction requirements for spatial environment, i.e. “political motive” behind environmental construction even if they are all public buildings.

(2) Characteristics of Composition Forms of External Space (Figure-6-2)

The common characteristics of 3 kinds of research objects in the composition forms of the external space are as follows: The external space comes mainly in the form of “architectural front courtyard” with apparent openness in its sense of space in terms of spatial forms and internal feelings. Such open Western-styled courtyard space constitutes a unique culture feature with the buildings of Western styles or combined Chinese and Western styles. Compared with the inward and sealed courtyard space structure with rigid stratification of conventional Chinese official governments and offices, such characteristic is a great change, and it reflected the political concept of the ROC government then to a certain extent, i.e. split from the hierarchical and conservative feudal thoughts, learn from Western democratic system, and establish a brand-new open and free democratic republic system. Moreover, it can be seen from the overseas background of the designers that the influences of Western culture on the buildings and gardens built in Nanjing then were apparent. The scale and form of some space is closely related to the function. Different functions and requirements for activity determine the scale and formal characteristics of some space.

On the other hand, as the main office buildings of the government organs are mostly single building or single composite buildings, the external space thereof mostly take on 1-3 courtyard spaces. The university campus is composed of

several buildings with diversified functions, for example, teaching, research, reading and P.E. etc.. Thus there are a great many different kinds of garden spaces. Although the Sun Yat-sen Mausoleum is an individual research object, there are 4 major buildings inside. Thus its spatial composition is composed of several spaces. Moreover, the vertical spatial compositions are also different. The exterior spatial form of the government buildings is horizontal without vertical or upward disposal and changes. As for the spatial forms of university campuses, the National Central University and Ginling College take on vertical forms. University of Nanking takes on the form of a slope, with minor changes in height differences in different spaces. The spatial forms of the Sun Yat-sen Mausoleum are gentle in the front, while steep at the back. The changes in the height differences between the spaces reflect the disposal according to local conditions and are an obvious constitutive characteristic.

(3) Characteristics of Flow Lines of External Space (Figure-6-3)

As the mutual relations among all the aforesaid 3 kinds of buildings in spatial layout are vertical or parallel in layout, and the main building and major roads also take on vertical or parallel relations, thus the composition patterns of flow lines of the external space are mainly determined by the buildings and the main outside roads of the organs, while such roads determine the direction of main roads of the external space, i.e. vertical to the main roads. Usually the main entrance to the buildings determines the approach direction into the buildings, vertical or parallel to the building. As all the buildings are symmetrical in structure, the flow-line composition of the external space takes on such common mode: parallel or vertical to the main axis based on the main axis of the external space, entering into the inside of various buildings through the entrance gate and constituting a crossed grid system. Meanwhile, the main buildings determine the artery, while the secondary buildings determine secondary roads. The dynamic linear structure of such grid style is well-coordinated and consistent with the geometrical lawns and the buildings of Western styles, and emphasizes the geometrical reasonable characteristics of Western gardens. Such characteristic is consistent with the political appeal of Kuomintang then, i.e. learning from the West, and attitude of the whole society toward Western culture, i.e. worship toward the Western world.

(4) General Characteristics

(i) Public courtyards eliminated Chinese traditional spatial pattern of a quadrangle courtyard, mainly in the form of atria. The courtyard was not

separated from the building, but constituted an overall space environment with it.

(ii) The external space of public buildings of the ROC is apparently characteristic of Western styles in compositional elements and forms, i.e. open and symmetrical regular landscapes. Meanwhile, they are equipped or interspersed with some traditional gardening elements to some extent, thus taking on characteristics of combined Chinese and Western styles.

(iii) Based on the common establishment of traditional enclosing walls, and open lawns established as the major space, the courtyards of such public buildings are “Western open space inside traditional enclosure”.

(iv) Such characteristics of integrating Chinese and Western styles reflects the invasion of Western culture into China during its transformation to a modern society, and the worship of Western culture of the national government and the whole society, and the development and challenges of cultural reconstruction after shocks by Western culture and fall of the traditional culture.

(v) The styles and characteristics of a space environment are mainly determined by the “political appeal” of the constructor instead of the psychological demands of the user.

Such buildings, courtyards and gardens that combined Chinese and Western elements were created by Chinese young architects who returned after studying abroad, as well as by some foreign architects in China. The spatial form of buildings, gardens and urban planning would be impacted by the social thoughts of their times, and the combination of Chinese and Western elements in the ROC was a product of Chinese and foreign thought integration in modern history. (Figure-6-4) Such excellent planning, architectural and gardening works were great examples of the integration of traditional Chinese culture and Western planning and design thoughts. The spatial elements, forms, scales and proportions reflected by these courtyards could serve as important reference for landscape design today. Meanwhile, these buildings and gardens combining Chinese and Western elements were important carriers of the transformation of Chinese gardens, and their protection and preservation will be of great significance for urban construction of Nanjing and the whole China.

6.3 Future Research

The paper made in-depth study of public courtyards in the ROC in Nanjing. In the following researches, courtyards in embassies in Nanjing and in major mansions will be investigated and analyzed, in the hope of providing more complete information about the characteristics of Nanjing gardens during in the ROC.

(1) Study on constitutive characteristics of courtyard space of embassies residing in Nanjing during the ROC

There were over 50 embassies, legations and general consulates in Nanjing during the ROC. At present, about half of the embassy buildings have been protected. And there are some large or small courtyard spaces therein, which are embodiment of garden cultures of various countries. Thus the research results obtained through analyzing about the constitutive characteristics of such courtyards and comparing with those of the courtyards built by Chinese are of quite high academic significances.

(2) Study on constitutive characteristics of courtyard spaces of ROC mansions

This study belongs to the research scope of the private garden of the ROC. High officials and literary celebrities gathered together in Nanjing during the ROC, thus there are widespread official residences and villas of various styles. Especially, the mansions and villa zone built in full conformity with the planning of “Capital Plan” on Yihe Road and Ninghai Road, and constitute a unique cultural landscape. According to statistical data by Nanjing Engineering Bureau in 1937, there were about 1700 garden villas. At present, about 58 excellent residences and villas have been preserved.^① The large quantity and strong independence of such buildings are thought to be the third feature of the ROC buildings in Nanjing. Thus the research on garden culture of official residences and villas during the ROC will be taken as the subsequent subject.

^① Refer to: Lu, H. and YANG X. (2001): Buildings of Republic of China in Nanjing (南京民国建筑): Nanjing University Press, Nanjing, 524PP.

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List of Published Papers

- 1) 張 清海, 孔 明亮, 章 俊華, 三谷 徹: Study on Composition Elements and Characteristics of External Space of Ancient Nanjing Government Buildings, Republic of China, dated 1912–1949 (和訳: 南京民国時代における政府建築の外部空間構成及び特徴に関する研究). 環境情報科学論文集 25, 2011.11: 431~436.
- 2) 孔 明亮, 張 清海, 章 俊華, 三谷 徹: An "Expanded Chongqing and Full-map" Based Research on the Composition and Characteristics of the Coastal Space of Chongqing in its Early Opening (和訳: 「増広重慶地輿全図」から見た重慶市開港初期における沿岸空間構成及び特徴に関する研究). 環境情報科学論文集 25, 2011.11: 419~424.
- 3) 張 清海, 章 俊華: Study on Spatial Composition Teaching of Landscape Architecture (和訳: 風景園林における空間構成の教学に関する研究). 中国園林, Vol.27/187, 2011.7: 36~40.
- 4) 張 清海, 孔 明亮, 章 俊華, 三谷 徹: Research into the Spatial Composition and Features of University Campuses in Nanjing in the Period of the Republic of China (和訳: 南京民国時代における大学キャンパスの空間構成及び特徴に関する研究). ランドスケープ研究 76 (5), 2013: 505~510.
- 5) 孔 明亮, 張 清海, 章 俊華, 三谷 徹: Research on the Constitution, Functions, and Features of the Surrounding Exterior Space of the City Gate in Chongqing City in the Late Qing Dynasty (和訳: 清末の重慶市における城門外の周辺空間の構成・機能及び特徴に関する研究). ランドスケープ研究 76(5), 2013: 605-610.
- 6) 張 清海, 孔 明亮, 章 俊華, 三谷 徹. Research into the Spatial Composition of the Sun Yat-sen Mausoleum and Its Characteristics during the Period of the Republic of China (和訳: 南京中山陵の空間構成及びその特徴に関する研究). Journal of Environmental Information Science Vol.41, No.5, 2013.3: 87~96.