

# 博士論文

## **Historical Analysis of Higher Educational Campus Evolution in Kwantung Leased Territory and Its Influence on Urban Development**

(関東州高等教育機関のキャンパスの変遷と都市への影響)

ZHUANG XIN

(庄 欣)

Department of Civil Engineering  
School of Engineering  
The University of Tokyo  
2014

# **Historical Analysis of Higher Educational Campus Evolution in Kwantung Leased Territory and Its Influence on Urban Development**

関東州高等教育機関のキャンパスの変遷と都市への影響

ZHUANG XIN  
(庄 欣)

In partial fulfillment of the requirements  
for the degree of  
Doctor of Engineering

Department of Civil Engineering  
School of Engineering  
The University of Tokyo  
2014

**Supervisor**  
Professor NAKAI Yu

© 2014

Xin ZHUANG

All Rights Reserved

## ABSTRACT

**Key word:** Nanyuan Campus, Kwantung Leased Territory, Campus morphology, Urban development, Historical analysis

This study is about the higher educational campus in Kwantung Leased Territory (関東州), China, which was established by Japanese colonist in the beginning of the Nineteenth Century. Especially, it will focus on the campus of South Manchuria Industrial School (南満洲工業専門学校). 100 years ago, it was used as a Japanese higher education institution; nowadays it is used for a Chinese University, the Dalian University of Technology (大連理工大学) and is called Nanyuan (南院) Campus.

The purpose of this study is to clarify the historical facts of Nanyuan's establishment and evolution and to ascertain its influence on Dalian's urban development. This purpose can be divided into the steps as followed:

- Based on the first-hand literature research the historical facts of Nanyuan campus are clarified and the evolution details of campus site are retraced and illustrated step by step. By this step, the Nanyuan site plans and other design papers in each year could be obtained.
- Based on the retraced result of Nanyuan site plans the Evolution of Nanyuan Morphology can be identified. In this way the transition of its planning style and ideology is discussed.
- Based on the analysis of the Dalian historical planning documents and maps the interaction relationship between Nanyuan campus and Dalian Urban Development can be ascertained.
- Through a comparative analysis with two other campus sites the similarities and differences of these cases could be found. The characteristics of the higher educational campus in Kwantung Leased Territory and the relation with the urban surrounding could be assumed.

Although there have been various research studies on Chinese historical university campuses, most of them focus on the campus established by Chinese government or the western missionary, which means that not many researchers have studied the campus established by Japanese colonist, especially in Kwantung Leased Territory. And also there is no research done with the focus on the colonial campuses and their influence on urban development in Kwantung



Leased Territory.

This dissertation consists of six chapters. Chapter 1 is the introduction, which mainly introduced the historical background of Nanyuan and the other comparative campuses. Nanyuan, as an important urban heritage of Dalian city was confirmed necessity to be researched. Not only the research purpose, methodology and logical structure of this dissertation are elucidated in this chapter, but also the research position and its originality are clarified. Besides a brief background of education policy of Dalian is introduced in order to understand the research objective easily. And it explains why Nanyuan was chosen as a research object: Clarify the historical facts in order to preserve this urban heritage in a good condition.

Chapter 2 arranges the historical facts of Nanyuan campus and assumes the transition progress of Nanyuan campus from 1914 when the campus was established until the year of 2000s in chronological order. Generally, it can be categorized in Japanese colony period and Chinese regime era. It also points out the key persons of the campus construction in each period. This chapter is the summary of the historical documents about the campus of Dalian University of Technology and serves as the basis of this research.

Chapter 3 as the core chapter of the dissertation focuses on the Nanyuan campus and its urban surrounding before 1945, including three parts of contents. Part 1: Through the literature review and the only two pieces of original Campus site plans, from 1922 and 1937, the campus planning papers and other evolitional details are retraced year by year. These papers are research basement for the next step. Then the characteristic of Nanyuan campus transition progress is summarized in campus and building levels. Part 2: Through an architectural perspective study on the evolution of campus morphology, the campus axis system, the structure, the unit-space and the planning ideology are clarified. Not only the zoning system plan method and the 'Fishbone' style axis system were used for the Nanyuan planning, but the typical '日' unit style is also found in the Nanyuan campus. Moreover, the significant result is that the 3<sup>rd</sup> school chairman OKA Oji (岡大路) was a key person for Nanyuan campus evolution. This was concluded out of studies on who charged the campus planning and construction from 1912 to 1945. He maintained the campus plan style in uniformity for more than 30 years until the school closed in 1945. Part 3: Focuses on Nan Yuan's influence on its urban surrounding. It as a kind of 'Suburban-located campus', except for it contribution to the urban development, the most significant phenomenon is an education land-use belt

that appeared around Nanyuan after it was established. That means a higher educational campus has the function to encourage its located surrounding to change into the education and research zone of city.

Chapter 4 gives an analytical comparison for higher education campuses in Kwantung Leased Territory. The campus of Ryojun College of Engineering and the campus of Manchuria Medical College were analyzed by the same method that is used for Nanyuan campus. Also the same analysis has been used to identify the interaction between these two campuses and their urban surroundings. Based on the results from the above analyses, the similarities among them are the following: The zoning structure planning method, the '田' type unit space and the red-brick mansion structure, the campus axis system is orthogonal with the urban coordination system and others are conform. At the same time, the unique characteristics of Nanyuan campus, for example the Gothic-eclecticism building style is conformed as well. Finally, based on the social-political background knowledge this research would like to discuss the root reason for the establishment and development of higher education campus in Kwantung Leased Territory.

Chapter 5 briefly introduces the evolution progress of Nanyuan after 1945. From 1946 to 1950 it was used for 3 higher education institutions and afterwards as a part of downtown campus of Dalian University of Technology until today. Based on the historical documents review, the key persons who took charge in the campus evolution have been clarified: Prof. Wang Tan (汪坦) & Prof. Qu Bochuan (屈伯川). Their planning tactics are also explored in this dissertation. It focuses on the Nanyuan build out history and evolution progress within this period, especially to clarify what differences appeared under the influence of the change of the national regime and social-culture context changed. A distinct change that happened in the campus is, that the original building style and the campus function structure was disorganized by the number of newly erected buildings. Moreover, an unintended decision has been made: a new campus, more than 10km away from Nanyuan, located in the suburb area Lingshui Town, began to be constructed in the end of 1950, which used a totally new planning ideology: half-romanticism & half-socialistic nationalism, Also called 'the Soviet Patten'.

Chapter 6 concludes that the research results of this dissertation can explain the present complex condition in Nanyuan campus and the special phenomenon of schools gathered around Nanyuan campus in Dalian city. As an important infrastructure in both the Japanese Colony period and the Chinese regime era,

Nanyuan was given a different mission for a different purpose, which maybe led to the obvious difference in the evolution progress of the campus morphology in these two Periods. This dissertation examines the impact of Nanyuan campus' establishment and ownership change by social factors and explores the root reason for the campus evolution progress. Clearly it will help to preserve this urban heritage in a good condition.

The main subjects are to clarify the historical facts of Nanyuan campus and to identify its influence on Dalian's urban development. Therefore, the conclusions of this research are:

- Higher educational campuses in Kwantung Leased Territory have typically common characteristics. The Neo-Renaissance style was the common design style of that time. In the Manchuria region it transformed and developed to the Japanese Colonial Architecture style.
- Nanyuan is a typical Japanese-Chinese mixed style campus with many significant characteristics of two differences periods.
- Nanyuan, as a higher education campus, can be deemed to be one of the main influencing factors for urban development and one contributing factor for the set up of the education and research zone in its urban surrounding.
- The whole evolution progress of Nanyuan and interaction relationship with its urban surrounding is under the influence of the political sovereignty of its location.
- It has been proved that this is the first experimented and carried out the 'new' urban planning methodology that used the 'Suburban-located Campus' as one of the main influencing factors to encourage the urban development by Japanese designers in Kwantung Least Territory, but not in Japan main land.

The contribution of this research to the management the collation and classification of original documents of higher educational campuses in Kwantung leased Territory. Especially, the discovery of numerous design papers disclosed for the first time. Based on them, the campus planning papers and other evolutionary details have been retraced year-by-year, and can be easily used for future studies.

## 論文の内容の要旨

本論文は、中国東北部大連に存在する大連理工大学のキャンパスの変遷の歴史に着目し、同時代の高等教育機関の歴史をあわせて比較しながら、キャンパスの空間構造およびデザインの特徴を明らかにするとともに、当該キャンパスの存在が大連の市街の発展に及ぼした影響について論じたものである。

大連理工大学南院キャンパスは、大連が関東州として日本の支配下にあった時期に設立された南満州工業専門学校を前身としている。本論文は、南満州工業専門学校が戦前の日本によって計画された教育施設であることに着目し、その計画思想やデザインの特質を、建築計画・都市計画の視点から分析することに主眼をおいている。満州や台湾など、戦前日本の植民地あるいは支配下にあった地域における建築や都市計画の歴史については、一定の先行研究が存在するが、中国においては大学等の高等教育機関のキャンパスの空間史は希少であり、とりわけ、関東州ないしは大連理工大学に焦点を絞ったものは見当たらず、とくにそのキャンパスの展開過程を、都市の発展と関連づけて考察した既往の研究は存在しない。

本論文は、全 6 章で構成されている。

第 1 章は序論として、まず戦前に日本によって関東州に設立された三つの高等教育機関である、南満州工業専門学校、満州医科大学、および旅順工科大学についてその概略が触れられ、とくに現大連理工大学南院キャンパスの前身である南満州工業専門学校のキャンパスの変遷を主たる調査対象にすることが述べられている。とくに、中国においては大学のキャンパス計画史研究がほとんど行われていないこと、また大学のキャンパス計画史を都市史の観点から論じる視点が不足していること、の二点を指摘し、本研究の独自性の根拠としている。そのうえで、大連理工大学南院キャンパスの設立とその後の展開過程を歴史的に分析・整理するとともに、その大連の都市の発展にたいする影響について考察することを、本研究の目的として提示している。

第 2 章では、大連理工大学南院キャンパスの創設時から終戦、さらに戦後から現在に至るキャンパスの変遷を、史料に基づいて整理している。教育機関としての組織的変遷と、建物の配置とキャンパス内の空間構造の変遷が客観的に記述され、第 3 章以降の分析および考察のベースが示されている。

第 3 章は、本論文の核となるパートであり、戦前(～1945 年)の南院キャンパスの空間構造の特徴と、その変遷の分析、およびキャンパス周辺市街地の変化の記述にあてられている。まず、

戦前の南院キャンパスが、伏見町の街路に直交する主軸と、その主軸に直交する形で伸びる副軸によって空間構造が規定され、この構造が伸展する形でキャンパスが拡充していったこと、および、副軸に沿って教育のための空間帯・実験実習施設のための空間帯・運動のための空間帯が並列的に形成され、伏見町の街路に平行する層状の機能別ゾーニングの計画思想が明快に読み取れることを示している。さらに、南院キャンパスが位置する伏見台地区は、南満州工業学校を中心に多くの小学校や中学校、高校などの教育施設が集中して設置され、ちょうど旧市街と新市街とを連結する形で、密度の高い教育施設ゾーンを形成していったことが示されている。

第4章は、南満州工業学校と同時期に関東州に設置された他の高等教育機関である、満州医科大学と旅順工科大学との比較が行われている。ここでは、周囲の主街路との関係から設定されるキャンパスの主軸とそれに直交する副軸、および機能別のゾーニング思想は、南院キャンパスと共通する傾向であること、さらに両大学のケースにおいて、南院キャンパスの伏見台と同様、初等中等教育機関が集中して立地する教育施設ゾーンが形成されていたことを示している。

第5章は、戦後(1945年～)の南院キャンパスの展開と変遷を整理している。ここでは、戦前の南院キャンパスのふたつの特徴であった、主軸と副軸の明快な空間構造、および伏見町通りに沿った層状の機能別ゾーニングが崩れていく過程が記述される。副軸が複雑に増加し、敷地を囲む街路に沿って建物が配置されていくとともにそれぞれの街路に複数の入り口が追加され、それに伴い主軸が有していた空間構造の骨格としての象徴性は相対的に弱まり、さらに、機能別に形成されていた各ゾーンが、伏見通りに沿った教育ゾーンを除いて機能混在型の多目的ゾーンに変貌していく過程が示されている。

最後に第6章において、結論が述べられている。とくに、戦前の関東州における高等教育機関の設置とその後の展開が、都市計画的視点を含む戦略的なものであった可能性を指摘した点は、本論文のおおきな成果であると言ってよい。

本論文は、歴史的文献調査を主としながら、史料のみでは不足する部分を適宜関係者へのインタビューで補い、全体として非常にいいにまとめられた力作である。また従来、大学のキャンパスを対象とする歴史的研究は、建築デザインの視点、もしくはキャンパス内部の空間構造にのみ焦点をあてたものがほとんどであり、都市の発展との関連から考察を加えたものは希少であった。とくに、戦前の関東州を題材にしたものは本論文の他に例を見ない。したがって本論文は、日本および中国のキャンパス計画史研究、および都市計画史研究にあらたな視座を加える貢献を達成しており、社会基盤学および工学に対する寄与は大きい。

## **TABLE OF CONTENTS**

### **Chapter 1: Introduction 3**

#### **1.1 Background and Purpose of Study 3**

1.1.1 Background 4

1.1.2 Research Object 7

1.1.3 Definition 10

1.1.4 Research Purpose 13

#### **1.2 Research Methodology 14**

1.2.1 Overview 14

1.2.2 Identified Firsthand Literature 16

1.2.3 Key Interviewees 21

1.2.4 Campus's morphology analysis, function composition, and relationship with city 23

1.2.5 Selection and analysis of Comparative Cases 25

#### **1.3 Framework of Study 27**

#### **1.4 Previous Research and Position of This Research 31**

1.4.1 Introduction 31

1.4.2 Campus Planning and Evolution of Higher educational Institution in K.L.T and SMR.Co. Zone 31

1.4.3 Campus planning of higher educational institution at the same period in other area in China and Japan 34

1.4.4 Urban Planning and Architecture Design of KLT 36

1.4.5 Modern Manchuria educational history 38

1.4.6 Research position 38

#### **1.5 Relevant research of historical background 42**

1.5.1 City background and great events of Dalian 42

1.5.2 Outline of Modern educational history in Northeast of China 42

### **Chapter 2: Campus Composition of DUT and Their Historical Transitions 45**

#### **2.1 Overview: the Campus Composition of DUT 45**

#### **2.2 Illustrated the Transitional Process of Nan Yuan 50**

2.2.1 Timetable of Transition 50

2.2.2 Key Points Analysis 52

#### **2.3 Briefly Introduce the Transitional Process of Lingshui Campus 67**

#### **2.4 Summary 70**

## **Chapter 3: Analysis the Morphology Transition Progress of Nan Yuan before 1945**

### **3.1 Architecture Department of South Manchuria Railways Co and SMPS 73**

3.1.1 Designer: Yokoi Kensuke and the Architecture Department of South Manchuria Railways Co. 73

3.1.2 The Changing Planning Philosophy and Designing Style 77

### **3.2 Analysis the Transition Progress of Campus Site Plan 87**

3.2.1 Campus Site Choice and Campus change 87

3.2.2 Study on the Planning Index 88

3.2.3 Open-space in the Campus and their Features 90

3.2.4 Summary 91

### **3.3 Analysis the Transition Progress of Buildings Located in the Campus 93**

3.3.1 Build-out and Demolition of Buildings 93

3.3.2 Definition the Architectural Character Based its Transition 103

3.3.3 Analysis the Function of Buildings: Transition progress from Compound to Oneness 105

3.3.4 Summary 107

### **3.4 Spatial Analysis: the Transition Progress of Campus Morphology 109**

3.4.1 Overview 109

3.4.2 Analysis of the Spatial Morphology on Unit Level 109

3.4.3 Analysis the Spatial Morphology on Whole Level 119

3.4.4 Conclusion the Features of Campus Spatial Morphology 132

### **3.5 Analysis the Relationship between Campus planning and Urban Planning 133**

3.5.1 Dalian Urban Sprawl and Campus Location 133

3.5.2 Interaction progress of Campus and Fushimi-dai 158

3.5.3 Summary 163

### **3.6 Summary 164**

## **Chapter 4: Analysis Comparative Sites which were Established at the Same Location in the Same Period 169**

### **4.1 Brief Descriptions of Higher Educational Institutions in Kwantung Leased Territory and Comparative Sites Selection Reason 169**

### **4.2 From Lushun Industrial School to Lushun College of Technology 170**

4.2.1 The First 4-year School Established in Kwantung Leased Territory 170

4.2.2 Transition of the Campus Site Plan and Buildings with School Upgraded 172

4.2.3	Analysis the Spatial and Form of the Campus	195
4.2.4	The Relationship with Ryojun (Lunshun) City	199
4.2.5	Summary	216
<b>4.3</b>	<b>From South Manchuria Medical School to Manchuria Medical College</b>	<b>217</b>
4.3.1	The First Medical School Belonged to Manchuria Railway Co.	217
4.3.2	Site Plan and Buildings Transition under the Influence of School Upgraded	219
4.3.3	Analysis the Spatial and Form of Campus Based on Urban	258
4.3.4	The Interaction Relationship with Houten (Shenyang) City	262
4.3.5	Summary	288
<b>4.4</b>	<b>Comparative Analysis</b>	<b>289</b>
4.4.1	Campus Designer and Campus Planning Tactics	289
4.4.2	Comparative Analysis Campus Transition Processes and its influence on Urban Surrounding	295
4.4.3	Expounded the reason for the Similarities of Campus and Its Urban Surrounding	296
<b>4.5</b>	<b>Summary</b>	<b>298</b>

## **Chapter 5: Analysis the Morphology Transition Progress of DUT's Campuses after 1945**

<b>5.1</b>	<b>Clarify the Historical Background of Codependent Double Campuses of DUT</b>	<b>299</b>
5.1.1	Background of the New Campus Build-out	301
5.1.2	Wan Tan and Qu Bochuan With the Campus Planning	303
<b>5.2</b>	<b>Analysis the Morphology Transition of the Downtown Campus</b>	<b>310</b>
5.2.1	Analysis the Transition Progress of Campus Site Plan	310
5.2.2	Analysis the Transition Progress of Buildings Located in the Nanyuan Campus	316
5.2.3	Spatial Analysis: the Transition Progress of Campus Morphology	327
<b>5.3</b>	<b>Comparative Analysis the Similarities and Differences of the Evolution Progress between that Two Campuses of DUT after 1945</b>	<b>338</b>
<b>5.4</b>	<b>Summary</b>	<b>340</b>

## **Chapter 6: Conclusion 341**

<b>6.1</b>	<b>Conclusion the Whole Evolution Progress of the Campuses on Architecture Viewpoint</b>	<b>343</b>
6.1.1	Conclusion the Similarities and Differences of the Evolution Progress of the Campuses	343



6.1.2	For the Relationship between Urban Planning and Campus Site Selection: to Find Out the Root of 'Suburb-Located' University	344
6.1.3	Summary the Interaction Relationship of the Designers and Their Design Philosophy	348
<b>6.2</b>	<b>Comparative Analysis the Modern Chinese Campuses inside and outside of Manchuria Region</b>	<b>353</b>
<b>6.3</b>	<b>The Lessons and Enlightenment for the Research</b>	<b>364</b>
<b>6.4</b>	<b>Summary</b>	<b>366</b>

<b>Notes</b>	<b>369</b>
--------------	------------

<b>References</b>	<b>377</b>
-------------------	------------

## **Appendices**

## LIST OF FIGURES

### Chapter 1

**Figure 1-1 Nanyuan Campus in Nowadays**

*Source: DUT Official Website & Google Map*

**Figure 1-2 One Officially Document Apply for Remove the Heritage Buildings of DUT to Develop Commercial Real Estate**

*Source: Dalian University of Technology*

**Figure 1-3 The Location of Dalian city in China**

*Sources: Liaoning Province administrative regions GIS data: 1:1M, County level, 1990 Liaoning Counties map from [www.hua2.com](http://www.hua2.com)*

**Figure 1-4 The Location of the Three Campuses in the Northeast area of Original China**

*Source: 写真:「奉天三十二景」「大連日報」「旅順風景」; 地图引用:「南满洲概覽」、大正十二年*

**Figure 1-5 The Illustration of the Boundary of Each Geographical Name**

*Source: <http://upload.wikimedia.org/wikipedia/commons/f/f9/Manchuria.png>, edited*

**Figure 1-6 The Typical Form of Moscow University**

*Source: [http://www.best-masters.com/photo\\_ecole/200-p.jpg](http://www.best-masters.com/photo_ecole/200-p.jpg)*

**Figure 1-7 Wang Tan**

*Source: <http://ggw.szu.edu.cn/pageDetail.aspx?id=1580>*

**Figure 1-8 Xu Qingxi**

*Source: Photo by the Author*

**Figure 1-9 Sun Yu**

*Source: Photo by the Author*

**Figure 1-10 Relationship of Unit Level and Whole Level**

*Source: Draw by the Author*

**Figure 1-11 Flow Chart of Dissertation**

*Source: Draw by the Author*

**Figure 1-12 Logic of Dissertation**

*Source: Draw by the Author*

**Figure 1-13 Photo of the Xinjing College of Engineering**

*Source: 滿洲建築雜誌 22(12)*

### Chapter 2

**Figure 2-1 Composition of the Downtown Campus in 1950s**

*Source: based on the Mapping map in 1951. 大连理工大学基建处 Edited*

**Figure 2-2 The Beiyuan Campus in the Past and Present**

*Source: 滿州慕情-全滿州写真集 & 中村與資平記念館別館 <http://blogs.yahoo.co.jp/yosihei8jp>  
Downloaded and Edited*

**Figure 2-3 The Dongyuan Campus, 2013**

*Source: Old Postcard & Photo by the Author*

**Figure 2-4 The Machinery Campus in the Present**

*Source: Photo by the Author*

**Figure 2-5 The Site Plan of the Lingshui Campus**

*Source: 大连理工大学校友会*

**Figure 2-6 The Campus site of the Xibu New Campus in the Lingshui Campus**

*Source: 大连理工大学*

**Figure 2-7 Ima Kagehiko**

*Source: 南满州工業専門学校創立三十年誌 1941*

**Figure 2-8 The Shahekou Locomotive Works**

*Source: 満鉄写真帖 1926*

**Figure 2-9 The Fushun Coal Mine**

*Source: 満鉄写真帖 1926*

**Figure 2-10 Location of the Nanyuan Campus in Dalian City**

*Source: Draw by the Author*

**Figure 2-11 Official Approval of the Application of establish the Dalian University**

*Source: 关东工专建校 60 周年校史回忆文集*

**Figure 2-12 Compare of the Fushimi-Dai Zone in the Dalian Maps, 1940s &1950s**

*Source: Draw by the Author*

**Figure 2-13 The Topographic map of the Lingshui Campus around 1951, 1/5000**

*Source: 大连理工大学基建处*

**Figure 2-14 The Initial Campus Planning of the Lingshui Campus around 1951,1/2000**

*Source: 大连理工大学基建处*

**Figure 2-15 The Buildings of the Lingshui Campus around 1980**

*Source: 大连理工大学校友会 Edited*

## **Chapter 3**

**Figure 3-1 Yokoi Kensuke, 1878~1942**

*Source: 满洲建筑杂志第 22 卷 第 4 号*

**Figure 3-2 Dalian Yayoi Women 's High-school in 1921**

*Source: <http://inbound.exblog.jp/20566915/>*

**Figure 3-3 The Houten Yamato Hotel**

*Source: 爱知大学 ICCS*

**Figure 3-4 The Central Part of the North Façade of the Main Building**

*Source: Photo by the Author*

**Figure 3-5 The Architectural Style Details**

*Source: Photo by the Author Edited*

**Figure 3-6 MANTETSU HONSHA BEKKAN**

*Source: 中国近代建筑总览：大连篇*

**Figure 3-7 DAIREN KAIINSCHUKAIJYO**

*Source: 中国近代建筑总览：大连篇*

**Figure 3-8 The Simplified Façade of the Build-out Building**

*Source: Photo by the Author*

**Figure 3-9 The Rose Window in the Back Façade**

*Source: Photo by the Author*

**Figure 3-10 The Semicircular Arch in the Corridors**

*Source: Photo by the Author*

**Figure 3-11 The Semicircular Arch in the No.1 Engineering Building in UT Hongo**

*Source: Photo by the Author*

**Figure 3-12 Tatsuno Kingo, Josiah Conder, William Burges**

*Source: 「建築雑誌 1919 年 12 月号」, 「建築雑誌 卷号不明」, National Portrait Gallery, London*

**Figure 3-13 Taiwan Sōtokufu**

*Source: [http://tupian.baike.com/a2\\_30\\_40\\_01300000820304126872403053683.jpg.html](http://tupian.baike.com/a2_30_40_01300000820304126872403053683.jpg.html)*

**Figure 3-14 The Dalian Minseisho**

*Source: Postcard*

**Figure 3-15 The Fushimi-dai Zone In 1915**

*Source: 大連附属地平面图 大正四年*

**Figure 3-16 The Scale of The Nanyuan Campus**

*Source: Draw by the Author*

**Figure 3-17 Build Density Curve of Nanyuan Campus before 1945**

*Source: Draw by the Author*

**Figure 3-18 The Green Belt in front of The Main Building**

*Source: Photo by the Author*

**Figure 3-19 The Open Space of Nanyuan In 1938**

*Source: Based on the Campus Site Plan of 1938. Draw by the Author*

**Figure 3-20 The Floor Plan of Nanyuan Campus Building**

*Source: Campus Site Plan of 1941. 南滿洲工業專門學校三十年史 1941*

**Figure 3-21 The Retraced Site Plans of Nanyuan Campus Before 1945**

*Source: Draw by the Author*

**Figure 3-22 the Façade of the Building constructed before 1922**

*Source: Photo by the Author*

**Figure 3-23 Detail of the Banister**

*Source: Photo by the Author*

**Figure 3-24 The Wooden Truss of The Auditorium**

*Source: 南滿洲工業學校写真集 1915 礼堂*

**Figure 3-25 Façade of the Build-out Building in 1935**

*Source: Photo by the Author*

**Figure 3-26 The Units Transform of The Nanyuan Campus**

*Source: Draw by the Author*

**Figure 3-27 The Campus Site Plan of UT In 1937**

*Source: 東京大学図書館*

**Figure 3-28 The Transition of The Campus Axis System**

*Source: Draw by the Author*

**Figure 3-29 The Transition of The Campus Structure**

*Source: Draw by the Author*

**Figure 3-30 Analysis the Relationship between Campus Planning and Urban Sprawl**

*Source: Draw by the Author*

**Figure 3-31 The Fushimidai Zone Planning In 1900 & 1910**

Source: 大連市築港及市街設計図 明治三十九年版&大連市街図 明治四十四年製（大正六年三版）

**Figure 3-32 The Triangular Relationship of Dalian Western New Town**

Source: Draw by the Author

**Figure 3-33 Campus Location under the influence of Urban Development**

Source: Draw by the Author

**Figure 3-34 Interaction Progress of Campus and Fushimi-dai Before 1945**

Source: Draw by the Author

**Figure 3-35 Xiaogangzi in 1910**

Source: 南滿洲鐵道沿線写真帖

**Figure 3-36 The Bird's Eye View of Dalian Downtown Area**

Source: [http://bbs.memoryofchina.org/forum.php?mod=viewthread&tid=79446&releid=80440&pre\\_thread\\_id=0&pre\\_pos=6&ext=1](http://bbs.memoryofchina.org/forum.php?mod=viewthread&tid=79446&releid=80440&pre_thread_id=0&pre_pos=6&ext=1)

**Figure 3-37 The West Park**

Source: 大連名勝絵葉書

**Figure 3-38 The Buildings of Nanyuan**

Source: Postcard

**Figure 3-39 The Dalian Fushimi-dai primary school**

Source: Postcard

**Figure 3-40 The Nanmankou Fusetsukougyoujitsumugakkou**

Source: 南滿洲工業専門学校要覧 1938

**Figure 3-41 The Main Building of the Central Research Center**

Source: <http://bbs.memoryofchina.org/thread-80440-1-2.html>

**Figure 3-42 View of the Shahekou Locomotive Works**

Source: 満洲写真帖 昭和四年版

## **Chapter 4**

**Figure 4-1 Retraced Campus Site plans of the RCE before 1945**

Source: Draw by the Author

**Figure 4-2 The Main Building of the Ryojun College of Engineering, Past and Present**

source: Postcard, 大連の街から-II & 大連老建筑

**Figure 4-3 The Original RCE Campus Site Plan in 1911**

Source: 関東都督府立旅順工科学堂一覽 1910

**Figure 4-4 Photo of the Enbujyo**

Source: 旅順工科大学第二回卒業記念 昭和五年三月

**Figure 4-5 Plane of the Student's Dormitory**

Source: 平和の鐘：旅順工科大学開学九十周年記念誌 2000

**Figure 4-6 Photo of the '光風閣'**

Source: 旅順工科大学第二回卒業記念 昭和五年三月

**Figure 4-7 The Original RCE Campus Site Plan in 1923**

Source: 旅順工科大学一覽 大正十二

**Figure 4-8 Building Density Curve of RCE Campus before 1945**

*Source: Draw by the Author*

**Figure 4-9 The Location of the Bachelor's dormitories in Ryojun City**

*Source: 平和の鐘：旅順工科大学開学九十周年記念誌 2000*

**Figure 4-10 Photo of the Whole Campus of RCE around 1940**

*Source: 平和の鐘：旅順工科大学開学九十周年記念誌 2000*

**Figure 4-11 The Laboratories & Practice Factories Zone**

*Source: 旅順工科大学第二回卒業記念 昭和五年三月*

**Figure 4-12 The Student's Dormitory Zone in 1920s**

*Source: 旅順工科大学第二回卒業記念 昭和五年三月*

**Figure 4-13 Photo of the Electrical and Physics Teaching Building**

*Source: 旅順工科大学第二回卒業記念 昭和五年三月*

**Figure 4-14 Photo of the Mining and Metallurgy Classroom Building**

*Source: 平和の鐘：旅順工科大学開学九十周年記念誌 2000*

**Figure 4-15 Photo of the Research Building, the initial one and the built-out one**

*Source: <http://www.mjish.net/book.aspx?cid=7&tid=5&pid=92> & 平和の鐘：旅順工科大学開学九十周年記念誌 2000*

**Figure 4-16 Photo of the Preparatory Classroom Building in 1930s**

*Source: 旅順工科大学第二回卒業記念 昭和五年三月*

**Figure 4-17 the Build-out part of the Preparatory Classroom Building**

*Source: 平和の鐘：旅順工科大学開学九十周年記念誌 2000*

**Figure 4-18 Inside of the Mechanical Practice Factory**

*Source: 旅順工科大学第二回卒業記念 昭和五年三月*

**Figure 4-19 Inside of the Second Electric Laboratory**

*Source: 旅順工科大学第二回卒業記念 昭和五年三月*

**Figure 4-20 The Spatial and Form Analysis graphic of the RCE Campus**

*Source: Draw by the Author*

**Figure 4-21 Photo of the Koa Monument and the Upgrade Monument**

*Source: 平和の鐘：旅順工科大学開学九十周年記念誌 2000 & 旅順工科大学第二回卒業記念 昭和五年三月*

**Figure 4-22 the Axis Analysis graphic of the Ryojun Western New Town**

*Source: Draw by the Author*

**Figure 4-23 Analysis the relationship between the College and the Ryojun City in 1913/1918/1929/1938**

*Source: Draw by the Author*

**Figure 4-24 Interaction of Campus and Ryojun city**

*Source: Draw by the Author*

**Figure 4-25 Photo of the Ryojun Higher Girls School**

*Source: postcard 愛知大学 ICCS*

**Figure 4-26 Photo of the Ryojun Normal School and Its Affiliated School**

*Source: 愛知大学 ICCS*

**Figure 4-27 Photo of the Ryojun Middle School**

*Source: ICCS 国際中国学研究センター*

**Figure 4-28 The Organization Diagram of the MMC in 1934**

*Source: 満州医科大学一覧 1934*

**Figure 4-29 FENG-TEIN 1913**

*Source: 「近代アジア アフリカ都市地図集成 1875-1940」, 1996*

**Figure 4-30 Map of the ‘奉天附属平面図’ in 1915**

*Source: 『南満洲鉄道株式会社十年史』、大正八年五月*

**Figure 4-31 HOUTEN 1931**

*Source: 「中国商工地図集成」、1992*

**Figure 4-32 The Campus Site Plan in 1934**

*Source: 満州医科大学一覧 1934*

**Figure 4-33 Part of the Map of the ‘奉天’ in 1936**

*Source: 中国大陸二万五千分の地図集成, 1993*

**Figure 4-34 Record of the Photo as ‘旧医院本館’**

*Source: 満州医科大学二十五年史 1936*

**Figure 4-35 Retraced Campus Site plans of the MMC Campus before 1945**

*Source: Draw by the Author*

**Figure 4-36 Photo of the Original Preparatory Dormitory in 1910s**

*Source: 満州医科大学二十五年史 1936*

**Figure 4-37 Photo of the Undergraduate Classroom Building in 1910s**

*Source: 東北芸術工科大学東北文化研究センター*

**Figure 4-38 Photo of the Hospital Main Building in 1910s**

*Source: 東北芸術工科大学東北文化研究センター*

**Figure 4-39 Photo of the Collage Main Building after 1922**

*Source: postcard 愛知大学 ICCS*

**Figure 4-40 Photo of the Stadium and the Preparatory Classroom Building**

*Source: 満州医科大学二十五年史 1936*

**Figure 4-41 The New Infectious Disease Building in Asahi-machi**

*Source: 満州医科大学二十五年史 1936*

**Figure 4-42 Bird View of the MMC Campus, 1931-1933**

*Source: Postcard*

**Figure 4-43 The Hand-painted Sketch of the Campus site plan**

*Source: <http://bbs.memoryofchina.org/thread-77740-1-1.html>*

**Figure 4-44 The College Auditorium and Library**

*Source: 満洲建築雑誌第十七巻第十号*

**Figure 4-45 MMC Campus Partition Map**

*Source: based on the campus site plan in 1936. 満州医科大学二十五年史 1936*

**Figure 4-46 The Campus Site Plan of The University of Tokyo in 1903**

*Source: 東京大学本郷キャンパスの形成と変容に関する研究 2001*

**Figure 4-47 Analysis of Urban Planning of ShengYang City in 1900s**

*Source: Draw by the Author*

**Figure 4-48 Campus Axis System & Urban Coordinate System, 1913**

*Source: Draw by the Author*

**Figure 4-49 Campus Axis System & Urban Coordinate System, 1915**

*Source: Draw by the Author*

**Figure 4-50 Campus Axis System & Urban Coordinate System, 1924**

*Source: Draw by the Author*

Figure 4-51 Campus Axis System & Urban Coordinate System, 1928

Source: Draw by the Author

Figure 4-52 Campus Axis System & Urban Coordinate System, 1931

Source: Draw by the Author

Figure 4-53 Campus Axis System & Urban Coordinate System, 1935

Source: Draw by the Author

Figure 4-54 New Houten Yamato Hotel

Source: ICCS 国際中国学研究センター

Figure 4-55 Analysis the relationship between Campus Planning and Urban Sprawl

Source: Draw by the Author

Figure 4-56 Photo of the Hospital Main Building

Source: <http://bbs.memoryofchina.org/thread-77740-1-1.html>

Figure 4-57 Akinori Avenue

Source: ICCS 国際中国学研究センター

Figure 4-58 Interaction of Campus and Houten City in 1932

Source: Draw by the Author

Figure 4-59 Compare the Three Campus: SMIS, MMC and RCE

Source: Draw by the Author

## Chapter 5

Figure 5-1 Planning for the Lingshui Campus in 1950s

Source: 大连理工大学基建处

Figure 5-2 The Difference of the two Campus Plans Wang's one and Qu's one

Source: Based the on the Campus planning in 1951 & ~1956. 大连理工大学基建处 Edited

Figure 5-3 The Site Plan of the Main Building of Moscow State University

Source: <http://www.physchem.msu.ru/images/karta9> Edited

Figure 5-4 The Site Plan of the Main Building of Harbin Institute of Technology

Source: <http://dev.hit.edu.cn/news/show.asp?id=3165> Edited

Figure 5-5 The Site Plan of the Main Building of Tsinghua University

Source: <http://gu.tsinghua.edu.cn/uploadfile/2013/0203/20130203060449401.jpg> Edited

Figure 5-6 The Site Plan of the Downtown Campus in 1990s

Source: Given by Xu Qingxi

Figure 5-7 Building Density Curve of Nanyuan Campus after 1945

Source: Draw by the Author

Figure 5-8 The copy of the Official confirmation letter about the certificate of the Identity of the Kwangtung Industrial Academy

Source: 关东工专回忆文集 2007

Figure 5-9 Copy of the Official Letter ‘给中央军委副总参谋长伍修权同志的信’

Source: 关东工专回忆文集 2007

Figure 5-10 Retraced Campus Site plans of Nanyuan Campus after 1945

Source: Draw by the Author

Figure 5-11 Photo of the Original Chemical Industrial Equipment Factory



*Source: Photo by the Author*

**Figure 5-12 Photo of the Chemical Experiment Building**

*Source: Photo by the Author*

**Figure 5-13 Photo of the 129st. Residence**

*Source: Photo by the Author*

**Figure 5-14 Photo of the Chemical Industrial Equipment Factory at Present**

*Source: Photo by the Author*

**Figure 5-15 The Distinction of the Planning Methodologies, shown by the Building's Location, before 1945 and after 1945**

*Source: Draw by the Author*

**Figure 5-16 The Units Transition Progress of the Nanyuan Campus after 1945**

*Source: Draw by the Author*

**Figure 5-17 The Transition of The Campus Axis System after 1945**

*Source: Draw by the Author*

**Figure 5-18 The Transition of The Campus Structure after 1945**

*Source: Draw by the Author*

**Figure 5-19 The Temporary Buildings in Nanyuan Campus**

*Source: Photo by the Author*

**Figure 5-20 the Boiler Room in Nanyuan Campus**

*Source: Photo by the Author*

**Figure 5-21 Photo of the No.1 Teaching Building of the Lingshui Campus in 1956 and Present**

*Source: 大连理工大学校友会*

## **Chapter 6**

**Figure 6-1 The Historical Pedigree of the Typical 'Suburban Located' Universities**

*Source: Draw by the Author*

**Figure 6-2 Campus of TIT and Its surrounding Ookayama's Planning**

*Source: 「大学町出現」, 2010 & ギャラリー明窓浄机館*

**Figure 6-3 Planning of the Kunidachi Daigakucho**

*Source: 「大学町出現」, 2010 & The Tokyo Metropolitan Archives*

**Figure 6-4 The Mentoring Relationship Flow Chart of the Campus & Urban Planners**

*Source: Draw by the Author*

**Figure 6-5 The Yamato Hotel and the Great Square of Dalian**

*Source: Postcard 東北芸術工科大学東北文化研究センター*

**Figure 6-6 Building Group of the Great Square of Houten**

*Source: Postcard 東北芸術工科大学東北文化研究センター*

**Figure 6-7 The Tokyo Station, 1920s**

*Source: Postcard named '帝都の大玄関東京駅の壮観' from 『大東京』（青雲堂）*

<http://www.kyoiku.metro.tokyo.jp/press/pr120418.htm>

**Figure 6-8 The Navy Ministry of Japan**

*Source: Postcard*

**Figure 6-9 Saint Fin Barre`s Cathedral Cathedral in Cork, Ireland**

*Source: [https://www.flickr.com/photos/charlie\\_cravero/](https://www.flickr.com/photos/charlie_cravero/)*

**Figure 6-10 The Yasuda Auditorium of UT**

*Source: Photo by Wang W*

**Figure 6-11 The Genogram of Chinese Modern Universities**

*Source: Draw by the Author*

**Figure 6-12 The Typical Case and Their Characteristics of Chinese Modern Universities**

*Source: Draw by the Author*



## LIST OF TABLE

### Chapter 1

Table 1-1 Methodology of this dissertation

*Source: Draw by the Author*

Table 1-2 Position of this Research in Previous Study

*Source: Draw by the Author*

### Chapter 2

Table 2-1 Dalian University of Technology Campus Organization Chart

*Source: Draw by the Author*

Table 2-2 Nanyuan Campus Ownership Transition Table

*Source: Draw by the Author*

Table 2-3 The Transition progress of Nanyuan Campus

*Source: Draw by the Author*

### Chapter 3

Table 3-1 The Transition of MANTETSU KENCHIKUKAI

*Source: Draw by the Author*

Table 3-2 Index of Nanyuan Campus Before 1945

*Source: Draw by the Author*

Table 3-3 The Evolution Details of the Nanyuan Campus before 1945

*Source: Draw by the Author*

Table 3-4 The transition of Nanyuan Campus on Planning and Architecture Levels, before 1945

*Source: Draw by the Author*

Table 3-5 Characteristics of Nanyuan Unit and Space Before 1945

*Source: Draw by the Author*

### Chapter 4

Table 4-1 The Chronicle Records of the Historical Big Events of RCE

*Source: Draw by the Author*

Table 4-2 The Evolution Details of the RCE Campus before 1945

*Source: Draw by the Author*

Table 4-3 The Campus Transition of Ryojun College of Engineer on Planning and architecture Levels before 1945

*Source: Draw by the Author*

Table 4-4 The Evolution Details of the MMC Campus before 1945

*Source: Draw by the Author*

Table 4-5 The Campus Transition of Manchuria Medical College on Planning and Architecture Levels before 1945

*Source: Draw by the Author*

## **Chapter 5**

Table 5-1 The Biography of Wang Tan, 1916-2001

*Source: Draw by the Author*

Table 5-2 The Biography of Qu Bochuan, 1909-1997

*Source: Draw by the Author*

Table 5-3 Indexes of the Nanyuan campus after 1945

*Source: Draw by the Author*

Table 5-4 The Evolution of the Nanyuan Campus after 1945

*Source: Draw by the Author*

Table 5-5 The Transition of Nanyuan Campus of Planning and Architecture Levels, after 1945

*Source: Draw by the Author*

Table 5-6 Summary the Characteristics of the Units Transition progress of Nanyuan campus, after 1945

*Source: Draw by the Author*

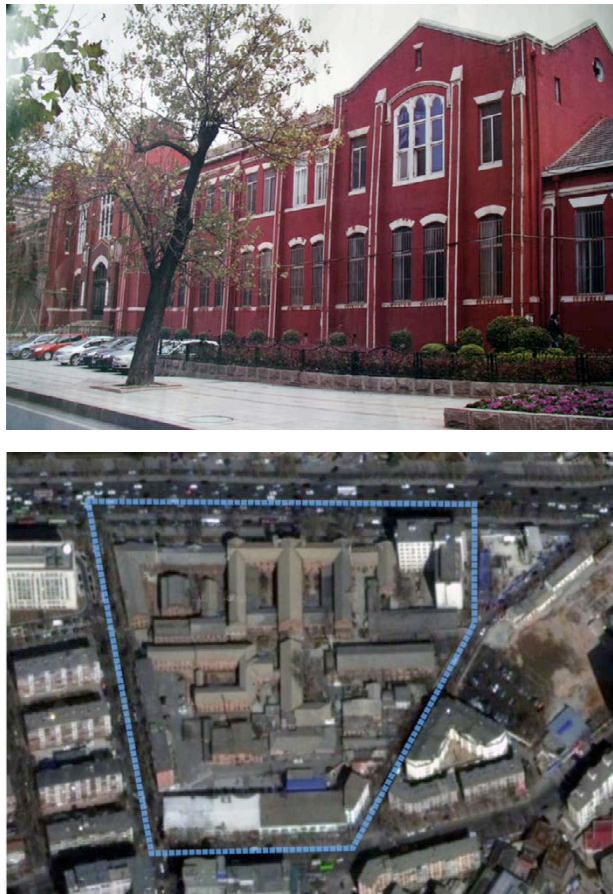
# *Chapter 1*

## Introduction



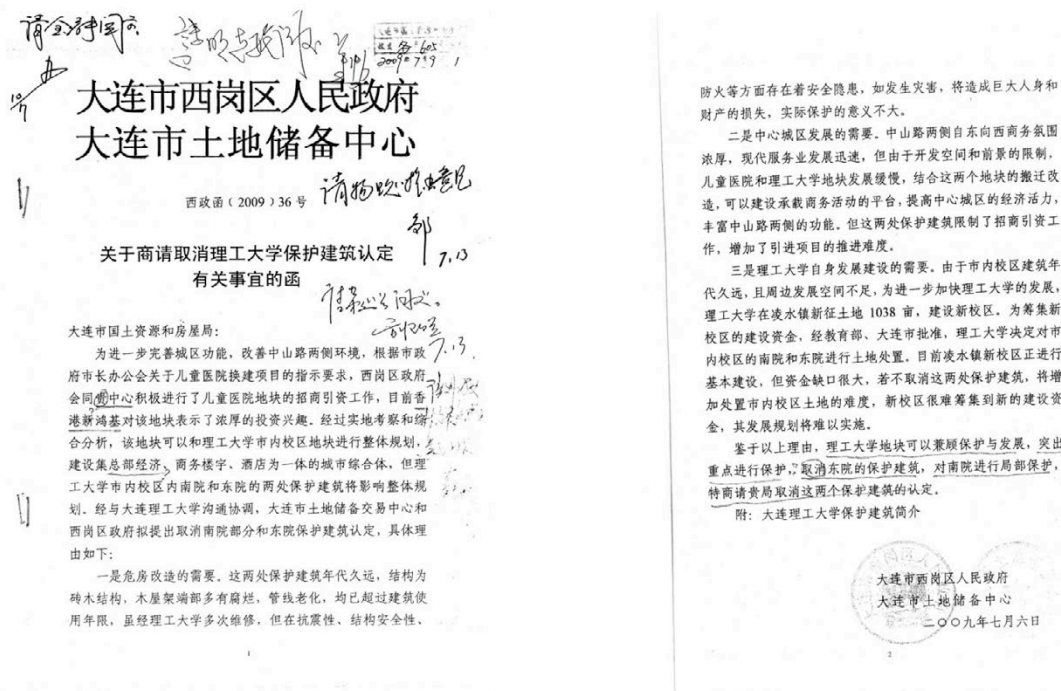
## 1.1 Background and Purpose of Study

In the south side of Zhongshan Road (中山路) in Dalian (大連) of Liaoning Province (遼寧省) of China, a red brick building group stands in Japanese colonial architectural style, which is Nanyuan (南院) building group, Downtown Campus of Dalian University of Technology (DUT), which also is original site of former South Manchuria Industrial School which is well-known in higher educational history in Kwantung Leased Territory (Figure 1-1). Around 2010, an application paper on cancelling the title of historical protective construction to rebuild, which made it face to demolish and the edge of its life and also made it become headlines in local news after PRC was established (Figure 1-2). According to this background, this research was expected to incorporate this into research field to analyze and organize historical background and construction characteristic of higher educational institutions in Kwantung Leased Territory, in order to get the relationship between this campus planning and city construction with premise of clarifying the campus historical context.



**Figure 1-1 The Photo of the Nanyuan Campus in Nowadays**





**Figure 1-2 The Officially Document Apply for Remove the Heritage Buildings of DUT to Develop Commercial Real Estate**

### 1.1.1 Background

Dalian University of Technology is one of famous higher educational institution in China, located in Dalian in Northeast of China (Figure 1-3). It was ranked in the top 15 among all Chinese universities and owned the support of "the 985 Project" and "the 211 Project" funded by the State Ministry of Education. It was established in April 15<sup>th</sup> 1949, which date was identified by official. As Engineering Institute of Dalian University, it became one of the first higher educational institutions after liberation of Northeast of China. With a little understand of its school history, there are lots of historical mysteries hidden by simple description of the school. As a newly established university, why was it paid deeply attention by our country and local places and quickly developed into a leading academic university in Northeast of China? As a newly established multiversity, why was it transformed into a university, which was concentrated on science and engineering so quickly in less than a year? As a newly established university, why were there a large number of books, documents and research data in school? And why were there comprehensive laboratory equipment, excellent faculty and advanced basic conditions in the early days of PRC established during that period economic conditions were very difficult? As a

newly established university and a higher educational institution in PRC, it was established in a very special process, which was different from other universities, and has its own distinctive characteristics. Until now, the reasons why these special characteristics generated are known by only a few people. By collecting preparation document, this research found that these mysteries have deeply relationship with the original campus user, South Manchuria Industrial School of South Manchuria Railway Company. To uncover this mystery, it should be mainly focused on the period before August 15, 1945 from the perspective of history, in order to gradually unravel the hidden mysteries of this university history.



**Figure 1-3 The Location of Dalian City in China**

It is easy to learn history of this city of Dalian through simple search, from Qing Dynasty as the name of Jinzhou to Russian invasion in 1890s. It was originated from Qingniwa (青泥窪) as a small fishing village, gradually developing, and became an important international seaport in northern Asia, and Dalian became an international city. In 1905, Russo-Japanese War broke out, the Treaty of Portsmouth ceded Port Arthur to Japan, which set up the Kwantung Leased Territory, on roughly the southern half of present-day Dalian. Japanese treated Dalian as an important part of Japan territory and invested heavily in the region, developed and treated similar as Japan mainland. In this period, Dalian became the main trading port between Manchuria and Japan and military

fortress in northeast China and quickly became a prosperity city. After a quiet 23 years, with 'the Mukden Incident' broke out, Northeast China got lots of public attention in the world. With the establishment of Manchukuo (満洲国) and advanced infrastructure established Kwantung Leased Territory (関東州), under background of Chinese complex domestic politics at that time, Dalian stood out its important position in the division of world geography. In 1945, at the end of the Sino-Japanese war, this area went back to the jurisdiction of the Soviet Union. Through consultation with the Soviet Union, PRC which was established in 1949 finally gradually got back sovereignty from 1951 to 1955. However, Kwantung Leased Territory (関東州) or Dalian city at that time, there were no appearance like traditional Chinese city. The first problem that the new government faced was how to use and transform this city. Fortunately, the government chose to face history and retained its unique characteristics and architectural style. Until now, Dalian is still a 'beautiful Pearl' in the North of China. However, in these history changes, some parts of this city truly reflected each detail of these history changes, by researching these history which we can understand these history after a century. Downtown Campus of Dalian University of Technology is a representative and individual case among them. In a certain sense, morphological evolution of a campus can also be seen as a history of social life and civilization development of the city and the country<sup>1</sup>. Especially, morphology and evolution of campus has become a testing ground for wrangling of national and political in modern historical changes, thus relationship between the campus and the city became closer. It makes campus plan from indirectly influenced by unconscious to directly establishing process influenced by conscious of country and society. Therefore, in researches of many scholars, university campus is identified as the symbol of ideal revolution experimental area in the city, which test civilized society, political morphology, cultural values, as well as authenticity of urban-oriented in historical process. Basic on this, there must be a certain amount of social significance in researching Kwantung Leased Territory (関東州) and its influence of urban surroundings.

Were there some scholars doing related research on physical form of higher educational institution in Kwantung Leased Territory? From searching of current academic, the answer is no. However it didn't mean that no one has researched historical evolution of campus in China and other related topics. At least there are lots of scholars' researches on this field. However most of them research on Chinese universities were based on general concept, which don't contain Japanese established. Most scholars focus on campus which were established by

western church or famous Chinese urban planning scholars in modern China, and formed a relatively complete research system. In other words, because most universities established by Japanese were abolished after the establishment of PRC, or its true background was hidden, these universities are a minority. In addition, there are few documents about higher educational institutions established by Japanese, and their geographical distribution are not wide as general concept campus, so it is no wonder that there are no relevant researches. Based on this, this research identified the importance and the significance of filling the gaps in academic research. The same as Christian college established by the Western missionaries, those universities established by Japanese also has a real sense of the modern university in Chinese history, and also the 'exotic'. In the different political conditions social environment and cultural backgrounds with 'original country', these universities experienced a process of constantly self-regulating, cultural transformation and mutual integration, especially for universities which experienced sovereignty changes in Kwantung Leased Territory (関東州), this characteristics are more obvious. After 2000, Chinese universities developed rapidly. In this historical condition, research history of these campuses that experienced more than one hundred years, maybe could reveal evolution and outcome of rapidly developing modern university campuses.

Thus, through researching and understanding evolution process about campus function and planning morphology of traditional higher educational institutions in Kwantung Leased Territory (関東州) during political changes, to grasp the developing rule in double cultural influence and double social value impact, further more exploring and validating that university campus has a very important research significance to reaction and reestablish on urban environment, social culture.

### **1.1.2 Research Object**

Researching and analyzing on evolution of higher educational institutions in Kwantung Leased Territory (関東州) is the research on university campus established by Japanese colonial in Kwantung Leased Territory (関東州) in the early 19th century. The background of these universities is higher educational institution system in Manchuria (満洲). They belonged to educational system in Northeast China (Manchuria), however these universities were ignored from previous university campus researches in Manchuria (満洲). Many scholars are

willing to research universities that established by old Chinese government or individual in Northeast of China, and directly ignore new universities inherited from universities established by Japanese colonial after PRC established. So it is necessary to introduce location and timeline of modern universities in Northeast China in detail (Kwantung Leased Territory and most parts of Manchuria) (Figure 1-4). Among them, campus of Harbin Institute of Technology planned and established after 1949 and the campus of Northeastern University that designed by Liang Sicheng(梁思成) in 1923 are the two favorable research objects by modern scholars, otherwise, higher educational institution campuses that established by Japanese colonial are left to care for them without nobody.



**Figure 1-4 The Location of the Three Campuses in the Northeast area of Original China**

Through the interpretation of historical documents, there are three higher educational institutions which were established by Japanese colonial in the beginning of 19<sup>th</sup> century in Kwantung Leased Territory (關東州) and South Manchuria Railway Company Zone. They are South Manchuria Industrial School which established in 1911 and Ryojun College of Engineering which established in 1909 in Kwantung Leased Territory, one more, Manchuria Medical College which was established in 1911 in Houten South Manchuria Railway Company

Zone (奉天満鉄附属地). Among them, South Manchuria Industrial School and Manchuria Medical College are very significant to research. That is mainly because these two campuses of higher educational institution are used as university campus until now, and is preserved features of campus in Japanese colonial period. And both of them were established by South Manchuria Railway Company. That is to say, other higher educational institutions were discarded or used for other purpose. Therefore, these two campuses could be considered as the most convenient and direct starting point to research campus's architecture and planning in Japanese colonial period. One of them is South Manchuria Industrial School which is located in Dalian, as an important part of Downtown Campus of Dalian University of Technology and is preserved and managed very well, called Nanyuan. The other one is Manchuria Medical College which is located in Shenyang (奉天) (South Manchuria Railway Company Zone) and now is used as the campus of China Medical University. However, due to massive sprawl and addition of this campus in recent years, appearance of original campus has been serious damaged. Moreover, Ryojun College of Engineering which established in 1909 also has obvious characteristics. It was also the most famous college in Kwantung Leased Territory, and the highest level of higher educational institution. It was collectively called with Tokyo Institute of Technology and Osaka Institute of Technology as 'Kyuusankudai (旧三工大)'. It was located in near Sapporocho (札幌町) in western of Lvshun (旅順), used former dormitories of Russian navy, and closed in 1945. Now the site of campus is used as the people's Liberation Army 406 Hospital. All of buildings were demolished or rebuilt except the main building and some parts of auxiliary building.

In order to directly present planning characteristic and architecture style of campus at that time, The research will determine the main research object as Nanyuan of Downtown Campus of Dalian University of Technology, which was the former campus of South Manchuria Industrial School, and its surroundings in the city. Based on historical facts, from viewpoint of architecture, the research will clarify the process of campus establishment and evolution, analyze planning methods and morphology characteristics of campus, and explore interaction with urban environment. In 100 years of development, this campus beard and engraved lots of historical events, through this research, these events will be presented to accept everyone's judgment in the first time. Historical background of Nanyuan campus will be detailed elaborated in next chapter.

Meanwhile, this research will take campuses of Manchuria Medical College

and Ryojun College of Engineering and its urban surroundings as comparison objects to support this research. This research aims to establish a knowledge system of higher educational institutions in Kwantung Leased Territory (関東州) by comparison analysis of campus of Nanyuan and other two campuses.

### 1.1.3 Definition

a. The translation of research objects in Japanese, English and Chinese

南満洲工業学校 South Manchuria Polytechnic School<sup>2</sup> SMPS 南満洲工业学校;

南満洲工業専門学校 South Manchuria Industrial School SMIS 南満洲工业专门学校;

大連理工大学 Dalian University of Technology DUT 大连理工大学

南満洲医学堂 South Manchuria Medical School<sup>3</sup> SMMS 南満医学堂

満洲医科大学 Manchuria Medical College<sup>4</sup> MMC 満洲医科大学

中国医科大学 China Medical University CMU 中国医科大学

旅順工科学堂 Ryojun Engineering School RES 旅順工科学堂

旅順工科大学 Ryojun College of Engineering<sup>5</sup> RCE 旅順工科大学

大連 Dalian 大连

旅順 Ryujun (Lvshun) 旅順

奉天 Houten (Shengyang) 奉天(现沈阳)

南満洲鉄道株式会社 South Manchuria Railway Company (SMR. Co.) 満鉄

関東州 Kwantung Leased Territory 关东州租借地

満鉄鉄道附属地 SMR. Co. Zone 満鉄铁路附属地

満洲 Manchuria 満洲

Other proper nouns will be clarified in the following dissertation.

b. As the key point of this research analysis, it is necessary to clarify the definition of 'Campus Morphology' here. Currently, research in the field of 'Urban Morphology' has been very detailed, which will be referred to definition of 'Campus Morphology' in this research. The definition is based on research framework of Western Classical Philosophical and Empirical Philosophy. It specifically includes two aspects: one is manifestation of campus under certain conditions, including various elements which composed the morphology of campus and their organizational structure; the other one is to emphasize evolution process of the campus in objectivity, relationship between campus



evolution and time, using historical methods to study its complete sequence relationship including past, present and future. <sup>6</sup>

c. For the history of northeast region of modern China, there are a few definitions of historical nouns are particularly vulnerable to be confused, so it is necessary to explain them one by one here. These historical nouns are related to geographical location, named as Kwantung (關東), Kwantung Leased Territory (關東州), SMR. Co. Zone (滿鐵附屬地), Manchuria (滿洲), South Manchuria (南滿洲), Manchukuo (滿洲国).

- Kwantung (關東).

The name Kwantung, means "east of Shanhai Pass(山海關) ", in mainland of China, and also the northeast of China<sup>7</sup>. This is a general noun, regional extent including Liaoning Province, Jilin Province and Heilongjiang Provinces of China. This word first appeared in the Ming Dynasty, in the poem of Zhao (趙振元), in the sentence of '關東之軍丁朝衣敗叶，暮餐寒沙，則督理糧儲，永消碩鼠之奸。', in his poem named '為袁氏祭袁石·(袁可立子) 宪副'. Commonly used in old China, and rarely in now.

- Kwantung Leased Territory (關東州).

Kwantung Leased Territory (關東州) was a territory in the southern part of the Liaodong Peninsula in Manchuria that existed from 1898 to 1945 in Mainland of China. In 1905 (明治 38 年), under Treaty of Portsmouth, this region incorporated into Japan's mercy. Then after World War II, it was under jurisdiction of the Soviet Army, and returned to the People's Republic of China gradually from 1950 to 1955<sup>8</sup>. This term has distinctive historical characteristics, especially refers to the Japanese territory included Lvshunkou (旅順口) and Dalian (大連) between 1905 and 1945.

- South Manchuria Railway Company Zone (滿鐵附屬地).

South Manchuria Railway Company Zone, usually called as SMR. Co. Zone, was the Japanese-controlled area, operated by Manchuria Railway Company in the Manchuria in first half of the 20th century. Manchuria Railway Company not only had ownership of these lands, but also executive power. Following the Japanese victory over Imperial Russia in the Russo-Japanese War and the signing of the Treaty of Portsmouth, the southernmost section of the southern branch (Harbin - Port Arthur) of the China Far East Railway was transferred to Japanese control. After the foundation of Manchukuo, with full Japanese control over all of Manchuria, the South Manchuria Railway Company ceased to have a function, but still had ownership of these lands. It also has distinctive characteristics of history, used from 1905 to 1945.



- Manchuria (滿洲).

Manchuria (滿洲) consists of the modern provinces of Liaoning (south), Jilin (central), and Heilongjiang (north), however, the northeastern portion of the Inner Mongolia Autonomous Region also is included. Although Manchuria (滿洲) zone was named for Manchu (滿族), but in the early Qing Dynasty it was only a tribal name, no meaning of place name<sup>9</sup>. It specifically refers to living area of Manchu people in northeast of China in Qing Dynasty and the early of Republic of China.

- South Manchuria (南滿洲).

South Manchuria (南滿洲) was the southern region of Manchuria, but not limited in Manchuria, it also includes parts of Hebei Province and Inner Mongolia, specifically referred to the railway line from Fengtian (奉天) to Dalian (大连) in middle of Liaoning (辽宁), including the cities of Zhuanghe (庄河), Andong (安东), Tonghua (通化), Linjiang (临江), Qinghuan (清原), Shenyang (沈阳).

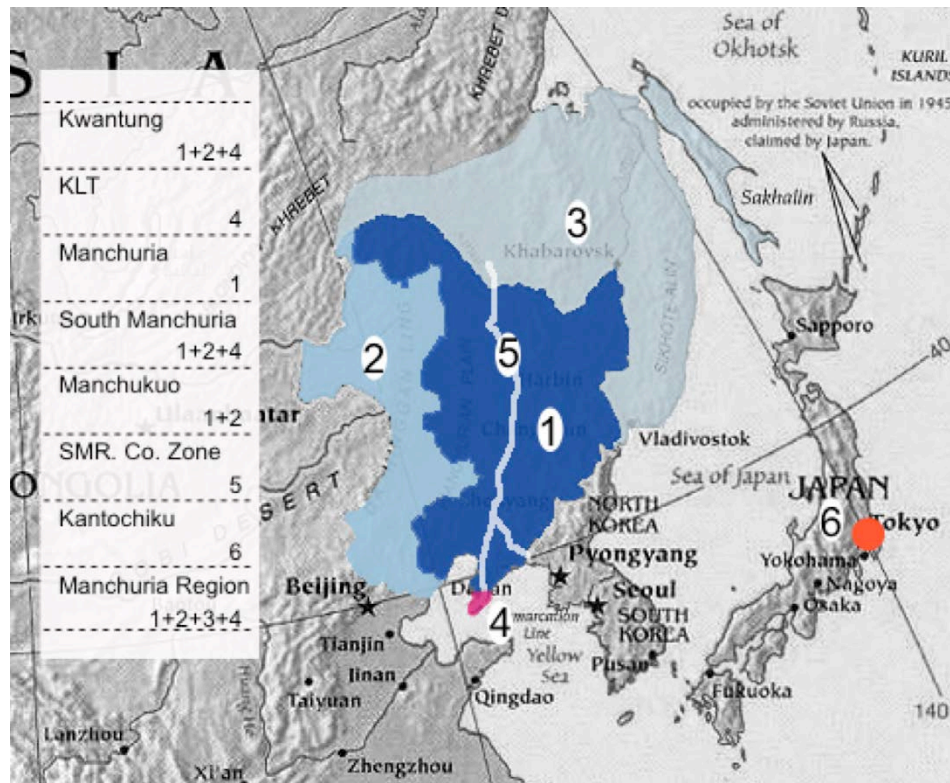
- Manchukuo (滿洲国).

Manchukuo (滿洲国) was a puppet state in Northeast China and Inner Mongolia, which was governed under a form of constitutional monarchy. In 1931, Japan seized the region following the Mukden Incident and installed a pro-Japanese government one year's later, Manchukuo's government was abolished in 1945 after the defeat of Imperial Japan at the end of World War II. Geographic region of Manchukuo was including the whole territory of the Northeast of China, but not including Kwantung Leased Territory (關東州), eastern part of Inner Mongolia, and Chengde (承德) in Hebei Province (河北省). This state was not recognized by Chinese government at that time, for this reason this area was called 'Northeast enemy-occupied area', as other enemy-occupied area caught in the war. It also has distinctive characteristics of history, used from 1932 to 1945.

Although they are different in geographic definition and time coverage of these regions, they have a common characteristic that is they all belonged to Japanese colony in the early 19th century to 1945, though their colonial executive power is different. This is also an important reason why they was easy to be confused. There is also a noun, Kantochiku (關東地区) is easy to be confused, which specifically refers to in the region of Kantohachikoku (關東八国) in Japan Mainland. Now it refers to the area including Tokyo, Kanagawa Prefecture, Saitama Prefecture, Gunma Prefecture, Tochigi Prefecture, Ibaraki Prefecture and Chiba Prefecture where is mountains in the northwest and the Kanto Plain (關東平野) in the central. It is not in the region that this dissertation

will be researched.

Based on definition of these nouns in each authoritative literature, it can be easily to distinguish their interaction relationship by the figure below (Figure 1-5). Understanding of these nouns will be help to clarify this research object.



**Figure 1-5 The Illustration of the Boundary of Each Geographical Name**

#### 1.1.4 Research Purpose

The purpose of this research was to distinguish established and evolution history of Nanyuan campus, clarified its interaction relationship with urbanization process of Dalian. This purpose can be subdivided into the following aspects:

- According to historical literature identified historical facts of higher educational institutions in K.L.T in each period. According to historical literature recovery master plans of Nanyuan Campus in each year, as well as building floor plans, sections and elevations in important years for following-up research.
- Based on recovery drawings of the campus, analyzes and identifies characteristics of campus morphology and function organization of

Nanyuan in each period.

- Explores and identifies interaction relationship between site choice and transition of Nanyuan campus and its surrounding urban environment, to discover real thinking of deciders and planners of campus established.
- By comparing these results and analytical results of two comparative cases, sums up similarities and differences of interaction relationship between campus planning of higher educational institutions in KLT (including outer part of SMR.Co. Zone) and its located city, to analyze reasons for generation of these similarities and differences.

For these four step-by-step progressive research purposes, ultimately discusses and verifies campus transition effective by society, country, politics and culture. In contrast, also discusses and verifies campus transition effectively to society, country, politics and culture. Therefore, fundamental purpose of this research can be summarized as follows: influence to campus planning of higher educational institutions by social and political conditions of KLT., and feedback effect to KLT by higher educational institutions in 'General Functionality<sup>10</sup>'.

Because of research object itself has obvious colonial architecture character, this research will focus on discussing relationship between campus planning and construction evolution and relative effective factors like politics, culture, culture, country and others, and its influence results. In addition, as a part of history architecture research of cities in the area of Northeast of China, it is necessary to clarify and reorganize to morphology characteristics of research object in each historical period, as accurate and detailed basic documents for subsequent research.

## **1.2 Research Methodology**

### **1.2.1 Overview**

Since the city of Dalian established in 1899, Dalian was in control of Japanese colonists, until the People's Republic of China officially took back the dominion of this area. In this period, the dominion of Dalian changed several times, and that is very rare in colonial history in the world. Therefore, to research campuses and buildings in this area, it should carefully distinguish directly or indirectly affect to research object by various historical facts. It needs to clarify its complex relationship and find out the rule. So the research of higher educational institutions in Kwantung Leased Territory should be based on real historical facts and plenty of literatures to find out sufficient and tenable historical literatures and original documents in complex history background to refine its planning development process to further analyze and research. Based on its planning development process, analyze spatial organizational structures and form organizational characteristics of campuses in each period under the influence of function, and evolution process of campus morphology after connecting these structures and characteristics in historical order.

Therefore, this research will be divided into four steps as the Table 1-1 showing. First, search for and identify historical literature, related city history records and other related research documents of higher educational institutions in Kwantung Leased Territory. Second, because of loss of most history records, in order to get more detailed knowledge of campus evolution and its influence to urban surroundings, interview and survey campus constructors and witness of city development is necessary. Third, based on interview and survey, use architecture analytical method to analyze function and morphology of each campus, summarize and conclude to obtain several characteristics, and also analyze the relationship between campus planning and evolution and urban planning and construction. Fourth, use comparative research method to comparison analyze selected three typical campus cases in morphology characteristic, evolution process and interactive influence relationship with urban surroundings to summarize campus characteristics of higher educational institutions which established by Japanese colonists in Kwantung Leased Territory, and explore the basic emerging reason.

**Table 1-1 Methodology of This Dissertation**

Step	Based on/With	Purpose
<b>Literature Survey</b>	Official Documents	Historical Facts as Background
	Designer Biography	<ul style="list-style-type: none"> <li>● Evolution of Campus Construction</li> </ul>
	Original Planning Material & City Maps	<ul style="list-style-type: none"> <li>● Evolution of Urban expansion</li> </ul>
<b>Interview Investigation*</b>	Participants who Engaged in Campus Construction	<ul style="list-style-type: none"> <li>● Details of the Campus Transition Progress</li> </ul>
<b>Morphology Analysis</b>	Campus Site planning Copies	<ul style="list-style-type: none"> <li>● Characteristics of Campus</li> </ul>
	Urban Planning & City Maps	<ul style="list-style-type: none"> <li>● Reason for the Campus Site Choice</li> <li>● Interaction of Campus and Urban Planning</li> </ul>
<b>Analytical Comparison</b>	The Results from above	<ul style="list-style-type: none"> <li>● Similarities and differences</li> <li>● Social-political influence on campus planning.</li> </ul>

### 1.2.2 Identified Firsthand Literature

As mentioned above, this research is about the history of architecture and planning. So it is particularly important to identify related historical literature. In particular, for such a research object with a special historical background, due to influence of nationalism and patriotism, some historical inevitably lead to extreme, inaccurate records and comments. Of course, this situation not only happened in China that demonize the colonizers, but also happened in some document published in Japan that deliberately beautified colonialism. Most of these documents are some comments or descriptive articles, so in selection of these documents, avoid selecting comments, but make efforts to find firsthand literature such as records from original designers about research object, original design drawings, and original design description. However, due to war and political unrest, lots of original drawings about research object were destroyed in the war or missing, it is impossible to find them, so when it could not find original drawings that have a very important significance and very useful for this study, printed maps in relative construction matters and process documents recorded in magazines or maps in monograph of relative designers, owners at

that time were regarded as firsthand literatures same as original design drawings, and used to analyze and research. Of course, hypothetical reconstruction maps that were drawn by later researchers and other surmised documents are not identified firsthand literature in this research, and also won't be used in research and analysis, but except for results of field mapping by later researchers.

### **Analysis of Urban Planning in Dalian**

The following literatures are used in this research, which are about all previous urban planning maps and other official maps of Kwantung Leased Territory, including Parts of the SMR. Co. Zone.

《1899 年俄国制关东半岛地图》(大连市城建档案馆 藏)

《1901 年达里尼特别市总体规划图》等资料(大连市城建档案馆 藏)(中文版, 刘长德, 1999)

《明治三十八年 大连市築港及市街設計図》(東京大学図書館 藏)

《明治三十九年 大连市街図》(東京大学図書館 藏)

《明治四十四年 大连市街図 大正 6 年版》各版(東京大学図書館 藏)

《大连市街図》其他年份各版(東京大学図書館 藏/自 藏)

《1956 年大连市街图》(大连理工大学基建处 藏)

《1990 年大连市街图》(自 藏)

《1930s 大连都市规划概要》(第一辑: 北海道大学図書館 藏/第二辑: 九州大学図書館 藏)

《1958 年大连市总体规划说明》(大连市城建档案馆 藏)

《1980 年大连市城市总体规划基础资料集》(大连市城建档案馆 藏)

《1990 年大连市城市总体规划图集》(睦庆曦 藏)

《2009 年大连市城市总体规划图集》(自 藏)

In addition to these original literature, the book '大連都市計画史' was published in 1984, edited by Koshizawa(越沢明), Ph.D. of University of Tokyo in Japan and president professor of Hokkaido University, is recognized as an authoritative and neutral stance research on planning history of Dalian city, which was considered as a first-hand literature in this research.

Identifications of the firsthand literature about urban planning of Lvshun and Shenyang also were made in the same way. Details of literatures will be given one by one in the subsequent part of research that is not repeated here.

## Historical records of the Campuses of Dalian University of Technology

Nanyuan campus of Dalian University of Technology was established in 1911 (大正 6 年), designed by Yokoyi (横井謙介) who was the '建築課課長' in SMR.Co. and his collaborators. The first phase construction works of the campus was Completed in 1914, began to be used as campus of South Manchuria Polytechnic School which belonged to SMR.Co., which was recognized as vocational and technical school according to Japanese old education system. In 1922, according to Japanese '専門学校令', the school upgraded to a higher educational institution in KLT. Due to war strife and plunder of school documents by Russia after Japanese defeat at that time, it is nearly impossible to find original design plan of this campus. Thankfully, school history books and overview at that time, including campus master plan and each layer of floor plan, were surviving, and also this campus still was well preserved after experienced war, compared with each existing Dalian city maps, it could be determined authenticity of campus plans recorded in school historical documents. In addition, official literatures of its owner - SMR.Co., also has relevant records. After analysis and comparison, they are basically the same with contents of literatures in this research, which was also used in this research as firsthand literature.

In addition, after the establishment of PRC, this campus and its surrounding area was carried out a detailed mapping by related staffs in newly established Engineering Institute of Dalian University around 1950, which is the predecessor of Dalian University of Technology. Now the only copy of the original drawings is collected in Infrastructure Construction Department of Dalian University of Technology, which is the most authoritative firsthand literature about Downtown Campus of Dalian University of Technology.

After the establishment of PRC, original planning and construction records of each campuses of Dalian University of Technology (including Downtown Campus, Lingshui Campus and other) were mainly collected in school authorities. Because most of constructions which were established before 2000 were entrusted to Institute of Architecture of Dalian University of Technology, so some of design drawings are collected in Design Company, and specific firsthand literatures are as following:

- 「大正十一年 南満州工業学校創立十年誌」(東京大学図書館 蔵)
- 「大正十一年 南満州工業専門学校写真」(大连理工大学図書館 蔵)
- 「大正十一年 南満州工業専門学校概況」(東京大学図書館 蔵)
- 「昭和十三年 南満州工業学校要覧」(山口大学図書館 蔵)
- 「昭和十八年 南満州工業学校創立三十年誌」(東京大学図書館 蔵)

「南滿洲鐵道株式會社十年史」(東京大學圖書館 藏)  
「滿鐵附屬地經營沿革全史 全三卷」(東京大學圖書館 藏)  
「關東局施政三十年史」(東京大學圖書館 藏)  
《關東工專建校 60 周年校史——回憶文集》(自 藏)  
《關東工業專門學校簡史》(大連理工大學檔案館 藏)  
《大連理工大學校史》(自 藏)  
《大連理工大學五十年紀事》(自 藏)  
《大連理工大學校史 1989-2009》(大連理工大學圖書館 藏)  
《大連理工大學化工學院 60 年史》(大連理工大學圖書館 藏)  
《大連理工大學校園規劃存檔資料》(大連理工大學國有資產處 藏)  
《大連工學院(陵水校區)遠景規劃圖平面圖 1: 2000》1950s,  
《大連理工大學市內校區測繪總平面圖》1950s,  
《大連理工大學市內校區周邊區域測繪圖》2000s 等 22 張原版設計藍圖(大連理工大學基建處 藏)。

### **Firsthand historical literature of campus Designers**

Nanyuan Campus, as former campus of South Manchuria Industrial School, was designed by design group which was led by Yokoyi Kensuke (橫井謙介) of SMR.Co<sup>11</sup>. In all kinds of records of SMR.Co., there are few introductions about this person, and no detailed biography. Currently the only detailed his records is in ‘滿鐵建築雜誌 第 22 卷第四號’ published in 1942 (昭和 17), so this literature was treated as firsthand literature in this research. In addition, Nishizawa (1992) who was the former Ph.D. of University of Tokyo and present associate professor of Nagoya University expounded Yokoyi (橫井謙介)’s biography in his books, which was reference of this study.

Through excavating to historical documents, this research found that OKA Oji (岡大路) who was the 3<sup>rd</sup> president of South Manchuria Industrial School also played an important role in architecture design and build-out progress of Nanyuan campus<sup>12</sup>. He, as original staff in MANTETSU KECHIKUKAI(滿鐵建築課), involved and responsible for campus construction around 30 years from establishment to being closed of this campus. Introduction of his personal and works was also recorded in each issue of ‘滿鐵建築雜誌’.

Planning and construction of Lingshui campus of Dalian University of Technology were not by specialized design and planning company, due to it was constructed in the hard times when the RPC just established around 1950. However, the campus designing indeed was completed by real architect. In the beginning of establishing campus, the campus was designed and constructed by



the Construction Committee in which Ph.D. Qu Bochuan(屈伯川) was the leader, who was dean of Dalian Institute of Technology too, Wang Tan (汪坦) was major technical director, and all civil engineering students participated. According to memory of Prof. Qu (睦庆曦), who was a member of the Construction Committee as a teacher of Architecture of Civil Engineering Department and later served as dean of Architecture Department of Dalian University of Technology, the design and construction works are mainly charged by Prof. Wang (汪坦), after his works were allowed and passed by the committee, the students of Civil Engineering Department could conduct drawings and site supervision work. Therefore, in this research Wang (汪坦) was identified as the campus planning designer. After 1956, he left Dalian University of Technology to Tsinghua University, and great changes about campus planning happened in Dalian University of Technology. The main reason was that Qu was affected by Soviet-pattern, or called as the Moscow University mode (Figure 1-6), and made great changes on campus planning. Therefore, he was identified as one of the designers of campus planning in this research too. Since biographical documents and personal biographies mainly focus on their achievements and contributions in political insight in China, there is nearly no literature describing their campus design philosophy at that time.



**Figure 1-6 The Typical Form of Moscow University**

Currently, literatures that were identified as firsthand literature are as follows.

《满洲建筑杂志 第 22 卷第四号》及其他部分期号(東京大学建築学専攻図

書館 藏)

《口述的历史：汪坦先生的回忆》(汪坦口述，赖德霖记注。中国知网)

《汪坦先生生平》(清华大学建筑学院，《建筑史论文集》第16辑，2002)

《屈伯川教育文集》(大连理工大学圖書館 藏)

### **Selection of other relevant aspects literature**

In this study, campus of Dalian University of Technology was researched as main research object which expanded to planning historical research on other higher educational institutions in KLT, therefore campuses involved in this research are not limited. Other secondary researched campuses include campus of Ryojun College of Engineering, Manchuria Medical College and so on. Identified firsthand literatures are as follows.

「旅順工科大学紀要 1938-1945」各卷(東京大学圖書館 藏)

「旅順工科大学一覽」各卷(東京大学圖書館 藏)

「旅順工科大学報告」各卷(東京大学圖書館 藏)

「關東都督府立旅順工科学堂一覽」(京都大学圖書館 藏)

「南满医学堂十年誌」(国立国会圖書館 藏)

「1934 满洲医科大学一覽」(国立国会圖書館 藏)

「1936 满洲医科大学 25 年史」(近畿大学圖書館 藏)

The study will use a lot of historical maps. Its specific names will be given one by one in the subsequence and not be repeated here.

### **1.2.3 Key Interviewees**

In experts discussion with Nishizawa (西泽泰彦), who is Manchuria architectural historian and associate professor in Nagoya University, the research accidentally discovered two Chinese scholars who area familiar with construction process of each campus in Dalian University of Technology. One of them is Wang Tan (汪坦), who is authority historian in Tsinghua University (Figure 1-7), and the other one is Xu Qingxi(胄庆曦), who is a former professor in Architecture Department of Dalian University of Technology (Figure 1-8). In the conversation with Nishizawa (西泽泰彦), he thought if the study wanted to learn more about architectural details of Nanyuan, it may get more from these two scholars. Unfortunately, Wang Tan (汪坦) had died many years ago, so it is impossible to interview him. By recommendation of Prof. Zhang (张险峰) from Architecture and Fine Art Department in Dalian University of technology, the

research interviewed Xu Qingxi(胥庆曦) who was nearly 90 years old in September 2013 in Dalian. Through conversation, author accidently informed that Xu not only followed Wang to complete construction of Lingshui new campus of Dalian University of Technology, but also participated in construction of the Downtown Campus, including Nanyuan, after establishment of PRC. That facts gave a lot help to the study. Through interviews with Xu (胥庆曦) author gained a lot of details on background knowledge of Nanyuan. He also enthusiastically introduced his friend, Sun Yu (孙钰) who was a city historian in Dalian city (Figure 1-9), which made this research get lots of precious historical photos and pictures.



**Figure 1-7 Wang Tan**



**Figure 1-8 Xu Qingxi**



**Figure 1-9 Sun Yu**

In addition, this research also interviewed related professionals in Infrastructure Department of Dalian University of Technology, which gained

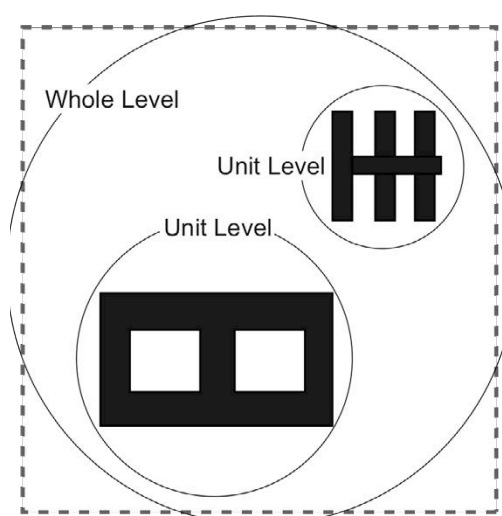
planning and construction drawings of campus which have not been public through them. These were conducted a good foundation to this research in smoothly process.

#### 1.2.4 Campus's morphology analysis, function composition, and relationship with city

Research of morphology evolution of campus could be analyzed by the method of figure-ground relation, architecture axes relation, construction composition and so on. In the previous research on campus's morphology analysis, so many research methodologies could be learned, hence the analysis methodologies of this research reference to Keshida's Ph.D. thesis '東京大学本郷キャンパスの形成と変容に関する研究' (岸田省吾 2001). The series of analysis methods in his thesis analyze dynamic process of campus's morphological transition in objective and comprehensive, which is easily distinguished the inherent parts and new elements in campus, so his research methods were learned by other researchers, such as Zhang (张继红, 2002) who use this analysis system in her Ph.D. dissertation. However, because of different research objects, this research was not completely copied, but some adaptable changes and adjustments were made in the research. For example, analysis methods of Keshida (岸田省吾) mainly focus on evolution analysis of open special morphology. However, in this research, due to the impact of Nanyuan campus's scale, the analysis was mainly changed into the evolution of campus's composition units.

So in this research, analysis of evolution progress of campus planning will be in these two levels (Figure 1-10):

- Unit Level. To view the open space and the Planning axis from the scale of one part of the campus, which composed by one or several spatial units.
- Whole Level. To view the Function composition and the Planning axis from the scale of whole Campus.



**Figure 1-10 Relationship of Unit Level and Whole Level**

Analysis of unit level focuses on composition morphology and transportation on unit-level of campus site. First, it is needed to do the definition of concept of the campus component units. This concept refers to the morphological integrity area which composed by architecture, construction and outdoor open space in campus. Every morphological integrity architecture area can be called as a unit. The description of morphological characteristic of units can mainly be divided into two forms: plus type and minus type. Unit of plus type is a type of unit that describe unit characteristic by plant form of architectures, that is to say, the form that mainly as the figure in figure-ground relation, and characteristic of this type of unit is that most of buildings in unit is morphological integrity, which has stronger identifiability. Unit of minus type is a type of unit that describe unit characteristic by outline of outdoor space, that is to say, the form that mainly as the ground in figure-ground relation, and characteristic of this type of unit is that compared with architecture, outdoor space is morphological integrity in unit, which has stronger identifiability.

Second, outdoor space contains inner courtyard which enclosed by the building, half surrounded courtyard and front and back courtyard, but also contains playgrounds, road space, parking, and other sites for campus future development, and also contains semi-outdoor space that covered by the colonnade. Boundary of outdoor space is various circumference elements such as buildings, vegetation, roads, ponds, mountains and so on. When combined in a campus, they became the boundaries of public space. According to these boundaries, public space was given attributes that closed or semi-closed, open and others. When a single public space is collected into a group, they will be given attributes that centrality, axial, dispersion and others. Also the similar enclosed public spaces, may be appears to be closed due to existence of one side of mountain, but also appears to open due to existence of one side of water. So in conducting research process of campus form, not only consider spacing form, but also considering to important factors, such as boundary features that composed this space. This is the method that gets a comprehensive detailed morphological analysis.

In this study, because in early time of campus established, there was almost no building around the site, only some roads, and original low vegetation, so in analysis of campus functional organization and morphological transition, mainly considers factors as following:

- Original topography
- road conditions around the site

- surrounding mountains and waters
- buildings in the campus
- enclosed structures on campus boundary

Analysis on whole level mainly concerned generation and evolution of function structure and axis system in campus. First, for the analysis of functional structure, it refers to functional classification of campus site in previous studies, teaching area, student dormitories area and faculty residential area composed several important part of campus structures. Unlike previous studies, they often refer to analyze public space morphological evolution of teaching area, and ignore morphological evolution progress of student dormitories space and faculty residential space. Because of specific establishment environment of higher educational institutions in K.L.T, this research will include all of functional areas that appear in campus, in order to get more objective and accurate analysis results. Second, analysis of axis system in campus mainly focuses on structure morphology of main axis, and rules of its establishment. Meanwhile, relationship between the main-axis and vice-axis is also the key point in this research.

In analysis of interaction relationship between campus and its urban surrounding, this research mainly focuses on:

- Campus site location in the city
- Relationship between campus axis system and city axis system
- Interaction relationship between construction progress of campus and urban development
- Direct impact of urban surrounding by campus construction
- Root cause analysis in generation of these relations

### **1.2.5 Selection and analysis of Comparative Cases**

The principle of selection of research comparative cases is similarity to research object. Due to the uniqueness of construction background of research object, selection of comparative cases limited to higher educational institution which was established in K.L.T or surrounding area which charged by Japanese colonists in SMR.Co. Zone in the beginning of 20<sup>th</sup> century.

The key principles of selection are as follows:

- Located in K.L.T or surrounding area in SMR.Co. Zone
- Established by Japanese colonists
- Campuses established around 1910s
- Most of original campus constructions are preservation

- Detailed historical documents are collected

Among them, Ryojun Engineering School which established by Kwantung Totokufu (関東都督府) in 1909 was upgraded into Ryojun College of Engineering in 1922, and South Manchuria Medical School which was established by SMR.Co. was upgraded into Manchuria Medical College (now China Medical University). These two campuses as representatives of civil institutions of higher education were selected as comparative cases. The specific reasons are as follows:

- These two higher educational institutions and school orientation and development conditions before World War II are quite consistent to this research object. The research of these two campuses can be summed up the own characteristics of higher educational institutions at that period in KLT.
- Due to Manchuria area was main battlefield of World War II, and this area also experienced the Chinese Civil War - liberation war, most of campuses of higher educational institutions, which were established before World War II, have been destroyed or no longer exists. In contrast, Ryojun College of Engineering is now used as a Chinese People's Liberation Army hospital, and Manchuria Medical College is now used as the main campus of China Medical University. Both of these campuses preserved well, although they both have experienced some damage and build out, but remain most of the original features. Therefore, they are conducive to research.
- Literature of construction of these two campuses is few, but there are some, which can be used as a first-hand research as basement reference of this research.

Analysis method of campuses morphology of these two comparative cases is the same as main research object. Based on obtained results, compares with Nanyuan campus in established background, campus structure, architecture style, spatial characteristics, evolution progress, the relationship with city surroundings, finds out similarities and differences among these three campuses, summarizes typical characteristics of higher educational institutions in Japanese colonial period in KLT.

### 1.3 Framework of Study

This research is divided into six chapters based on chronological order, as shown in the Figure 1-11. In addition the logic relationship of Dissertation is shown as the Figure 1-12.

## Flow Chart of Dissertation

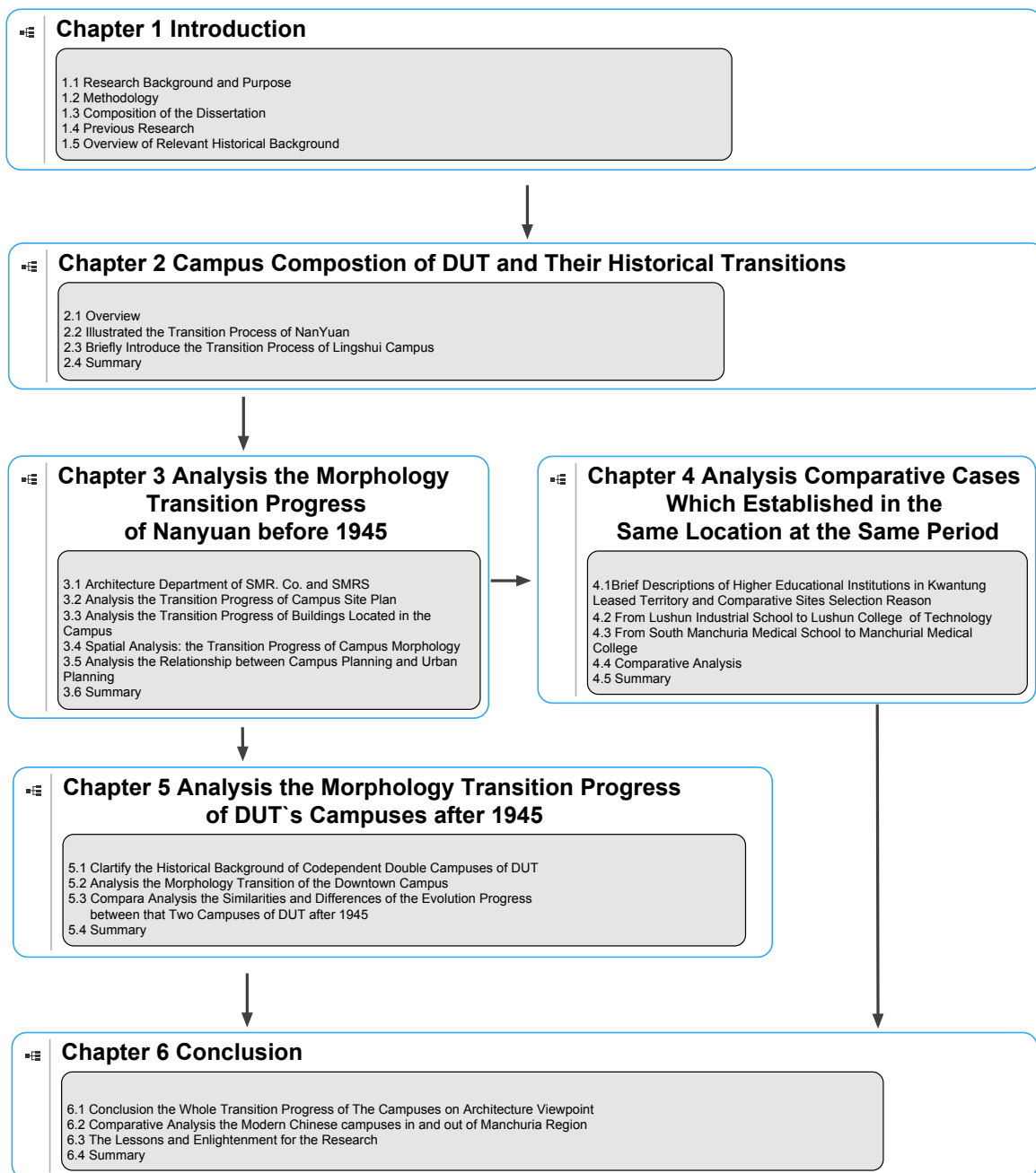
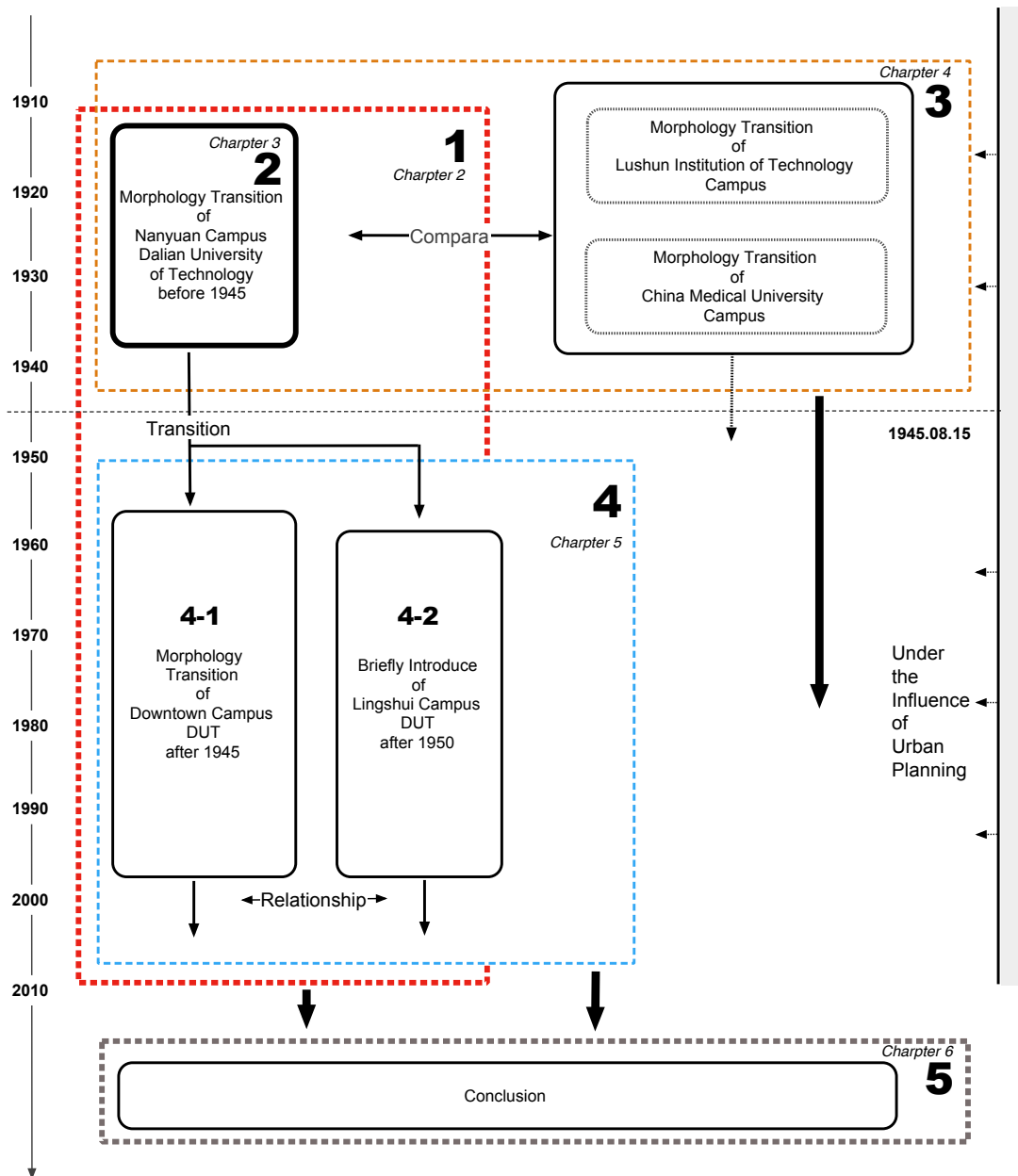


Figure 1-11 Flow Chart of Dissertation



## Logic of Dissertation



**Figure 1-12 Logic of Dissertation**

Chapter 1 is the introduction, which mainly introduced the historical background of Nanyuan and the other comparative campuses. Nanyuan, as an important urban heritage of Dalian city was confirmed necessity to be researched. Not only the research purpose, methodology and logical structure of this dissertation are elucidated in this chapter, but also the research position and its originality are clarified. Besides a brief background of education policy of Dalian is introduced in order to understand the research objective easily. And it explains why Nanyuan was chosen as a research object: Clarify the historical

facts in order to preserve this urban heritage in a good condition.

Chapter 2 arranges the historical facts of Nanyuan campus and assumes the evolution progress of Nanyuan campus from 1914 when the campus was established until the year of 2000 in chronological order. Sincerely, it can be categorized in Japanese colony period and Chinese regime era. It also points out the key persons of the campus construction in each period. This chapter is the summary of the historical documents about the Campus of Dalian University of Technology and serves as the basis of this research.

Chapter 3 as the core chapter of the dissertation focused on the Nanyuan campus and its urban surrounding before 1945, including three parts of contents. Part one: Through the literature review and the only two pieces of original Campus site plans, from 1922 and 1937, the campus planning papers and other evolutional details are retraced year by year. These papers are research basement for the next step. Then the characteristic of Nanyuan campus evolution progress is summarized in campus and building levels. Part two: Through an architectural perspective study on the evolution of campus morphology, the campus axis system, the structure, the unit-space and the planning ideology are clarified. Not only the zoning system plan method and the 'Fishbone' style axis system were used for the Nanyuan Planning, but the typical '田' unit style is also found in the Nanyuan campus. Moreover, the significant result is that the 3rd school chairman OKA Oji (岡大路) was a key person for Nanyuan Campus Evolution. This was concluded out of studies on who charged the Campus Planning and building from 1912 to 1945. He maintained the campus plan style in uniformity for more than 30 years until the school closed in 1945. Part three: Focuses on Nan Yuan's influence on its urban surrounding. Except for the campus contribution to the urban development, the most significant phenomenon is an education land-use belt that appeared around Nanyuan after it was established. That means a higher educational campus has the function to encourage its located surrounding to change into the education and research zone of city.

Chapter 4 gives an analytical comparison for higher education campuses in Kwangtung Leased Territory. The campus of Ryojun College of Engineering and the campus of Manchuria Medical College were analyzed by the same method that is used for Nanyuan campus. Also the same analysis has been used to identify the interaction between these two campuses and their urban surroundings. Based on the results from the above analyses, the similarities among them are that the campus axis system is orthogonal with the urban

coordination system, the zoning structure planning method, the `日` type unit space and the red-brick mansion structure, and others are conform. At the same time, the unique characteristics of Nanyuan campus, for example the Gothic-eclecticism building style is conformed as well. Finally, based on the social-political background knowledge this research would like to discuss the root reason for the establishment and development of higher education campus in Kwangtung Leased Territory.

Chapter 5 briefly introduces the evolution progress of Nanyuan after 1945. From 1946 to 1950 it was used for 3 higher education institutions and after works as a part of downtown campus of Dalian University of Technology until today. Based on the historical documents review, the key persons who took charge in the campus evolution have been clarified: Prof. Wang Tan (汪坦) & Prof. Qu Bochuan (屈伯川). Their planning tactics are also explored in this dissertation. It focuses on the Nanyuan build out history and evolution progress within this period, especially to clarify what differences appeared under the influence of the change of the national regime and social-culture context changed. A distinct change that happed in the campus is that the original building style and the campus function structure was disorganized by the numbers of new built buildings. Moreover, an unintended decision has been made: a new campus, more than 10km away from Nanyuan, located in the suburb area Lingshui Town, began to be constructed at the end of 1950, which used a totally new planning ideology: half-romanticism & half-socialistic nationalism, which is also called the Soviet Patten. But the zoning structure planning method staged the same.

Chapter 6 concludes that the research results of this dissertation can explain the present complex condition in Nanyuan campus and the special phenomenon of schools gathered around Nanyuan campus in Dalian city. As an important infrastructure in both the Japanese Colony period and the Chinese regime era, Nanyuan was given a different mission for a different purpose, which maybe leaded to the obvious difference in the evolution progress of the campus morphology in these two Periods. This dissertation examines the impact of Nanyuan Campus` establishment and ownership change by social factors and explores the root reason for the campus evolution progress. Clearly it will help this urban heritage is preserved in a good condition.

## **1.4 Previous Research and Position of This Research**

### **1.4.1 Introduction**

In this section, it summarizes and analyzes previous research, which was related to the research object, and was based on illumination about position of this research.

This research focuses on analysis of campus function, morphology evolution and its characteristics of higher educational institutions in Kwantung Leased Territory which is based on campus planning and historical evolution in South Manchuria Industrial School. Moreover, research urban development of Dalian city construction and planning which is closed related to campus planning, as assistant to support campus evolution historical progress of higher educational institution.

The research field related to:

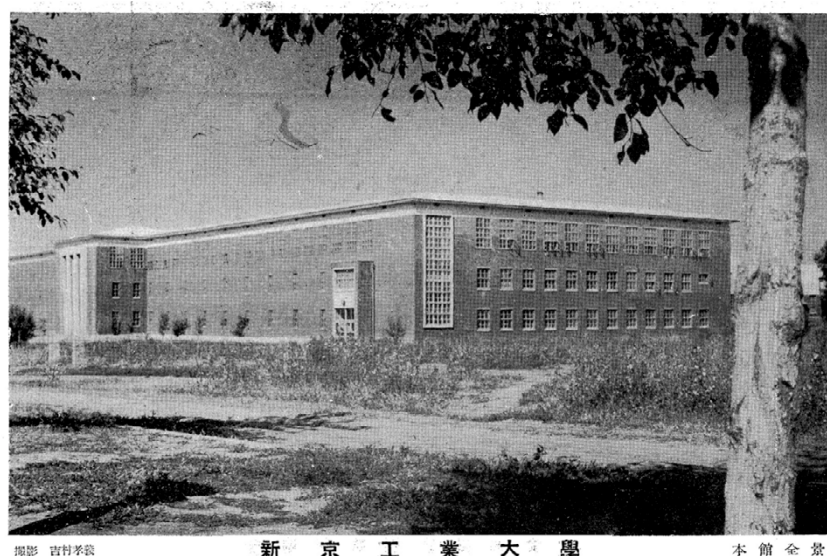
- (a). Research campus planning of higher educational institution in Kwantung Leased Territory, which is research background that directly related to research object.
- (b). Research campus planning of higher educational institutions in the same period, which is research background that related to comparative cases.
- (c). Research urban planning and architecture in Kwantung Leased Territory and SMR.Co. Zone and construction group, which is research background that related to established background, style and design concept of mainly research object.
- (d). Research higher educational history in Modern K.L.T and SMR.Co. Zone, which is research background that related to main owner of research object in education policy.

Throughout previous research in China and Japan, there is nearly no research related to (a), in the opposite, there are plenty of researches related to (b), (c), (d), which is theory basis for this research. In the following, there is overview of previous researches.

### **1.4.2 Campus Planning and Evolution of Higher educational Institution in K.L.T and SMR.Co. Zone**

According to ‘City History of Dalian’, there were only 2 higher educational institutions established in the beginning of 19 century, one was South Manchuria

Industrial School established by SMR.Co. and the other one was Ryojun Engineering School established by Kantocho(関東庁). Throughout whole area of SMR.Co. Zone, there was only one another higher educational institution established by SMR.Co. in Shenyang(沈陽) which named Manchuria Medical College<sup>13</sup>. There were sporadic official records and photos about their campus structure and transition, maybe relative low number of documents led to condition so that nearly no research were about this field. That is to say, there is a blank area that researches about construction history and buildings of these three schools and even schools which were newly developed schools based on them after Chinese Liberation. Fortunately, basic conditions of planning and construction of these schools could be ascertained by the official records and documents which are listed in previous section. Whereas, to emphasize an important point, in the beginning of 19 century, there were not only these three higher educational institutions, but also Fengtian Normal School(奉天師範学院、1923) in Fengtian which was well known in the field of education that time. However, Fengtian Normal School was established out of K.L.T and not by Japanese colonialists, so this school would not be research object. Besides, after 1930s, higher educational institutions which were established by Japanese colonialists, such as Datong College (大同大学), Jianguo College (建国大学), Xinjing College of Engineering (新京工業大学) and so on (Figure 1-13), would not be research object, because of their location, short-lived history (abolished in 1945), and disparate established background.



**Figure 1-13 Photo of the Xinjing College of Engineering**

South Manchuria Polytechnic School was established in 1922, former school was South Manchuria Industry School which was similar to vocational high school nowadays<sup>14</sup>. Campus planning and each layer of floor plans of main buildings during their first period (1920s) were recorded in ‘南滿洲工業学校創立十年志’ which was edited by South Manchuria Industry School. Each layer of floor plans of main buildings and addition parts in the heyday were recorded in ‘南滿洲工業学校創立三十年志’ which was edited by South Manchuria Polytechnic School. After World War II, South Manchuria Polytechnic School experienced several times of exchanging owners, at last, was taken over and inherited as an original by Dalian Institute of Technology which was the first industry college after People's Republic of China was founded<sup>15</sup>. In the 1950s, the campus and its surroundings of Dalian Institute of Technology in the city were surveyed and made maps, collected in Infrastructure Office of Dalian University of Technology. From 1950s to the 2000s, evolution history of this campus was not detailed recording, and the lasted record was the surveying maps about its surrounding s around 2000 which was found some mistaken and missing by checking in this research. Besides of urban planning maps and other city maps of Dalian, the records of Nanyuan campus were limited. The researches about analysis of campus construction and space function have not been found.

The situation of research progress of the campus of Ryojun College of Engineering and the campus of Manchuria Medical College were the same as South Manchuria Industry School. Some elementary campus site plans and architecture design papers or outline pictures were simply recorded in college history books and some memories. The specific provenience about materials will be revealed and written in the following dissertation. Also, the previous researches about analysis of campus construction and space function of these two schools have not been found, besides of the records to advocate the declaring position of these two colleges in former Japanese newspapers, definitely, these recodes will not be written in this dissertation.

It is worth reminding that according to researches of Wang (汪坦), Fujimori (藤森照信), Xu (胥庆曦), Zhang (张复合), Muramotu (村松伸), Nixizawa (西泽泰彦), the original designer of South Manchuria Industry School who planned the campus and constructed the main building was Mantetsu Kenchiku Ka (滿鉄建築課) which was led by Yokoyi Kensuke (横井謙介) who graduated from Architecture of the University of Tokyo in Meiji 38 (1905) which is the only research directly related to this research object. Based on this, research about MANTETU KANCHIKUKA (滿鉄建築課) and Yokoyi (横井謙介) was detailed in

books which wrote by Nixizawa (西泽泰彦). However, in his research there is no research about South Manchuria Industry School.

### **1.4.3 Campus planning of higher educational institution at the same period in other area in China and Japan**

#### **a. Researches about colleges in China**

From the Opium War in 1840, China suffered the colonialist aggression for almost 110 years. The aggressors, mainly including Europe, not only aggresses and plunders material benefits, but also were wantonly erosion and infiltration in the spiritual level of Chinese civilization. In that period, on the land of China many foreign religious organizations in support of the invaders set up large number of Missionary University, put on the cloak of China-and-West-Merge began to spiritual colonization to Chinese. Many of them in the future become world-renowned universities such as Yenching University, Huaxi Medical University and a large number of other higher education institutions, which in practical significance become an important branch of modern university in China. Unlike higher education institutions established by the Japanese colonialists, these higher education institutions have a broad influence throughout various regions of China. Whereas, a series of government universities which were established by the old Chinese government such as Tsinghua University, Northeastern University. As an important branch of Chinese modern university, they have been recorded in Chinese education history. These higher education institutions directly are concerned by modern architects, which have been extensively researched.

Researchers, Xu (徐卫国,1986), Zhang (张旭红,2002), Dong (董黎,2006), Chen (陈晓恬,2008), Xie (谢文博,2008), research modern universities in China, campus planning and design, and composition and morphology of public space in a comprehensive study. Based on a number of important historical pictures and planning documents, describe characteristics of campus planning each period of modern Christian college, and other national universities, private universities.

Fang (方雪, 2010), from a perspective of Henry K. Murphy, who was mainly planners and designers of modern Christian college in China, studied the history of its campus planning and design methods in China university campus.

From a perspective of modern pedagogy scholar, Wu (吴立宝, 2009) and other scholars, studied the trace of localization University based on the education system, national policy and the idea of lead author of the University,

summarized the mainstream evolution of China's modern universities.

According to the individual level of the research about the modern Chinese university campus, researchers like Luo Sen (罗森, 1984/2001), Lei Lei (雷蕾, 2008), Miao Rixin (苗日新, 2011), and others, focus on Tsinghua University, clarify its planning history and construction evolution of the campus in each period. Zou(邹永华, 2007), summarized its spatial characteristics and construction evolution.

According to campus planning in each period, for the research on Yenching University (Beijing University), Chen (陈青慧, 1986), Li (李向群, 2005), Sun (孙华, 2012) and others, illustrates the evolution and spatial structure composition of the campus. From the perspective of landscape planning and cultural heritage protection, Wang(王瑶, 2012), dentally excavated the historical evolution of eight historic courtyard in Beijing University. The campus master research was started from the details and completed.

Li(李传义, 1987), Huang (黄德明, 2003), concerned about the generation and evolution process of Wuhan University campus, and summarized its planning and architectural characteristics

Bai(白艳萍, 2006), regarded the outdoor space of their historical campuses from three famous universities (Southeast University, Nanjing University and Nanjing Normal University) as research objects, and summarized it. At the same time, types and characteristics of the outdoor space were explicit. Wang(王德滋编, 2002), as a historian, reproduced the history trace of Nanjing University, and collected many important historical photographs and campus planning records. Dong (董黎, 2004), recovered historical established process of Ginling Woman College campus, and evaluated their architecture characteristics. Zhang(张雪蓉, 2004), as an educator, researched evolution of Southeast National University, clarified underlying causes of its campus established, evolution process, indicated its established morphology fellow the model of modern Japanese and American university.

Bao(鲍世行, 1995), Huang (黄世孟, 2002), Xia (夏铸九, 2002), made historical campus of Taiwan University as research object, which has 80 years history of Japanese colony, and excavated historical record of its establishment, evolution, based on which commented its campus planning characteristics, and discussed reflection of modern campus expansion process.

#### b. Research about colleges in Japan

It is worth reminding that, initial prototypes of a series of National Colleges, which were established by old China, in a sense, learned from modern university



in Japan. Moreover, higher education campuses in K.L.T also were established by modern Japanese colonists. So it is important to research previous researches about evolution of modern university campuses in Japan for this research. From previous research, it is an important area for Japan architectural researchers that research about modern higher education institutions in Japanese mainland.

Kishida (岸田省吾, 2001)<sup>16</sup> detailed researched established and evolution process of Hongo Campus of the University of Tokyo which was the first modern university in Japan. Publicly publish planning maps and historical photographs in each period of Hongo campus. Basis on organizing and summarizing records, researched public spaces of Hongo campus and indicated characteristics of campus space and form, clarified evolution of public spaces feature in each period

Miyamoto (宮本雅明, 1977) focused on Kyoto University campus. Through researching and summarizing, evolution process was divided into five periods, in the support of the detailed data, main characteristics each period and the law of overall evolution process was obtained. Maki (真木利江, 1996) investigated and researched formation process of Kyoto University campus and surroundings in city, found the relationships and characteristics between evolution of campus and city form process.

Yokochi (横地進, 2005) researched architectural heritage in Sapporo campus of Hokkaido University. Write out detailed construction and protection process for each building, and also clarify overall construction and campus protection process of Sapporo campus of Hokkaido University from detail to whole.

Sakuma (佐熊勇亮, 2010) analyzed space construction around main entrances of modern Japanese universities, based on classified 69 cases, clarified space types and characteristics space around main entrance in Japan.

#### **1.4.4 Urban Planning and Architecture Design of KLT**

In addition to research of campus planning of higher education institutions, research of urban planning and architectural design of KLT also has a relationship with this research.

##### **a. Targeted to urban and architectural researches**

Koshizawa (越沢明, 1982) starting with his PhD thesis in University of Tokyo, ‘満州の都市計画に関する歴史的研究’, published a series of research results of important state of urban planning history of Manchuria area, contained KLT area.

Among the researches, one was focus on urban planning of Dalian which was an important city in KLT area which was named '大連都市計画史 1898~1945' published by Japan-China Economic Association in 1984. It summarized and discussed deeply on the issue of urban planning of Dalian from beginning of construction to Japan colonists retreated in 1945, which was about 40 years. A number of valuable historical documents were published, and also identified historical facts about original ideas of urban planning and reasons of structural evolution of Dalian. It was also recognized as the first systematic study of urban planning of Dalian.

Xiao(萧宗谊, 1988), focused on urban morphology of Dalian, pointed out an important characteristic of Dalian urban planning evolution which sprawled like "palm pattern" form.

Liu (刘长德, 1999), Dong (董伟, 2001), on the basis of previous studies, excavated historical records of Dalian urban planning for 100 years (1899 to 1999) and indicated official documents and their contents of Dalian urban planning in each time. Especially focus on situation of Dalian urban planning after 1949, made the first summarized study, explained historical process of Dalian planning evolution from several aspects.

Nishizawa (西沢泰彦, 1996/2007/2008)made a series research in this field, published such as '図説「満州」都市物語——ハルビン・大連・瀋陽・長春', '満州——記憶と歴史', '日本殖民地建筑论' and so on. In the field of urban planning and architecture of Dalian, published many historical valuable photos and historical documents. Through the interpretation of planning in each period and architecture policies, explained reason why the city constructed was like that and pointed out that similarities and differences among the city and buildings of Dalian, other cities in Manchuria, and in Japanese mainland

Fujimori (藤森照信), Wang (汪坦), as a group, in recent years, published a series of researches focusing on surveys of architecture in Japanese colonial in China. One of them is 'Overview of China Modern Architecture' which edited by Xu (胥庆曦), Zhang (张复合), Muramatsu(村松伸),Nishizawa (西沢泰彦), published in 1995. It detailed exposed historical facts like photos of historic buildings, geographical location, design detailsand other historical facts in Dalian (including Lvshun). And survey and drawing detailed building layout of two historic buildings.

#### b. Focus on the design group of SMR.Co. and others

In Japan, there are lots of researches about the design groups of SMR.Co. and Kanto-Cho (関東庁). Among the researches, Nishizawa (西沢泰彦) and

Muramatsu(村松伸) made the greatest contribution to on construction activity which was conducted by SMR.Co. and Kanto-Cho (関東庁).

The research which related deepest to this research is Nishizawa's (西沢泰彦 1992) Ph.D dissertation, '二〇世紀前半中国東北地方における日本人の建築活動に関する研究', which explained construction activity progress of Japan design group or individual in KLT. and South Manchuria from the beginning to the end and also identified the interactive of these group and individual, described relationship between these organizations and developing and implement building codes. Especially, in his research, historical record about SMR.Co. Kanchika (満鉄建築課) and life history and works of Yokoyi (横井謙介) and Oka (岡大路) are important basement for promote this research.

#### **1.4.5 Modern Manchuria educational history**

From the point of view of pedagogical, there are many scholars research about educational history of modern Manchuria. Lu(卢鸿德 1995) pointed out typical characteristics of Manchuria educational history in each period in his book '日本侵略东北教育史'. And in his book, summarized all of educational decree and principle of K.L.T and Manchukuo (伪满洲国) which provide research basement in educational decree.

#### **1.4.6 Research position**

According to the analysis of the related previous researches above, some typical features can be found as follows:

- There is basically no research on campuses of higher educational institution established by Japanese colonialists in China. So far, there are only some researches on that kind of campuses in Taiwan. Whereas, focusing on campus of modern higher educational institution which was established by Japanese designers in K.L.T area in mainland of China, there is still a gap in academic research. Instead, researches, which focus on campus of modern higher educational institution which established by European and American colonial designers, are quite a lot. Meanwhile, some researches focus on the campus established by Chinese.
- There are quite a lot of research on history of urban planning and architecture design in Dalian. Most of them make a point view of overall research, which general summarized history of urban planning and

architecture design in KLT area. Although, Koshizawa(越沢明) and other researchers also make a focus on planning of water system and sewer system in Dalian, but for others, such as specific research of educational land-use planning and construction, it is extremely inadequate.

- For Chinese historical campuses, there are lots of researches focuses on their construction and evolution before PRC established, few after PRC established. Comparative study of various aspects of previous research, most of researchers focus on the period before PRC established or before Japan's defeat in August 1945.
- There are basically no coherence and comparison analysis on Dalian urban planning, except researches by Liu (刘长德), Jiang (蒋耀辉) and Dong (董伟), which were on historical evolution process across multiple regime changes of Dalian urban planning.

Based on summary of previous studies above, the position of this research in overall view of this field and its uniqueness shown in the Table 1-2 and explains as follows:

**Table 1-2 The Position of This Research in Previous Study**

**Position of this Research in Previous Study**

Focus on:	Urban Planning & Architecture Design under the Japanese Regime	Planing of University Campus in China and Japan	Education Policy At Colonial Period
In MainLand of China especially in Manchuria	<div>Designing Group</div> <div>西沢泰彦(1992/1996/2000) ...</div>	<div>Out of the Kwantung Leased Territory</div> <div>Luo Sen(1984/2001) Xu weiquo(1986) Li Chuanyil(1987) Zhang Xuhong(2002) Dong Ji(2004/2006) / Bai Yanping(2006) Fang Xue(2010) Chen Xiaotian(2008) Wang Yao(2012) ...</div> <div>In the Kwantung Leased Territory</div>	<div>History analysis of Colonial Education Policy In MainLand of China</div> <div>Lu Hongde(1995) ...</div>
	Japanese Colonies	<div>Colonial Architecture</div> <div>西沢泰彦(1996/2007/2008/2011) 藤森照信、Wang Tan, XU Qingxi, Etc. (1995) Zhang Fuhe (1994-) &amp; his Group 村松伸, Bao Muping(2002/2003) ...</div> <div>Urban Planning</div> <div>越沢明(1978/1982/1984/1988/2002) 西沢泰彦(1996) Xiao Zongyi(1988) Liu Changde(1999) Dong Wei(2001) Zhang Dan(2012) Jiang Yaohui(2013) ...</div>	<div>Campus Planning in Taiwan</div> <div>Bao Shixing(1995) Huang Shimeng(2001) Xia Zhujia(2002) ...</div> <div>Campus Planning in Japan</div> <div>宮本雅明(1977) 岸田省吾(2001) 横地進(2005) 左熊勇亮(2010) 木方十根(2010) ...</div>
Japan Mainland			

- This research fills a gap for various types of studies on construction of campuses established by Japanese. Because of their special geographical location and construction period, campuses of higher education institutions in K.L.T were ignored by Chinese and Japanese researchers. On the other hand, as a campus established by Japanese government, the research object but in China is a new type of research on higher educational institution, creating a new research field in Chinese higher education institution campuses.
- On urban planning and architectural design, this research fills the gap of researches on educational buildings and land use planning in K.L.T area (or SMR.Co. Zone). This research is the first time that takes the campus of higher education institution established by Japanese in K.L.T area as the academic research object, to clarified its original established and historical evolution facts, and to explore and study its spatial characteristics
- This research takes original established and evolution of higher education institutions in K.L.T area before 1945 as main research object, but also analyzes, summarize and compare its evolution process after 1945. It is mainly on the view of a more coherent, explores on historical documents, analyzes design characteristics, and discuss on spatial morphology evolution on downtown campus of Dalian University of Technology, Nanyuan, in two periods, before and after 1945. Meanwhile, do the same analyzsis and research on new derived campus in later period.

## **1.5 Relevant research of historical background**

### **1.5.1 City background and great events of Dalian**

This section briefly introduces historical background, decrees promulgation of cities' construction after Dalian city was established and other great events. Reference to previous researches, the table which was drawn in chronological order is shown in the Appendix 1: **Chronological Chart of the History of Dalian and Its Big Events**<sup>17</sup>.

### **1.5.2 Outline of Modern educational history in Northeast of China**

Since 1904, after Japanese imperialists replaced the rule of Dalian from Russia, Japanese colonists began to establish a series of educational legislations, and began to spirit control to Chinese in Kwantung Leased Territory and SMR. Co. Zone more than 40 years. Due to its little connection to this research, not repeat in this article. Here only organize brief history of regulations related to high educational institutes, which published in Kwantung Leased Territory and SMR. Co. Zone. The outline of original regulations below does not include the regulations that focus on under the education level of Kougakudou (公学堂). However, it includes some related regulations about high educational institute, which is the equal of the level of modern high school education.

The details are shown in the Appendix 2: **The List of Education Regulations and the Big Events of Kwantung Leased Territory and SMR.Co. Zone**<sup>18</sup>.

## *Chapter 2*

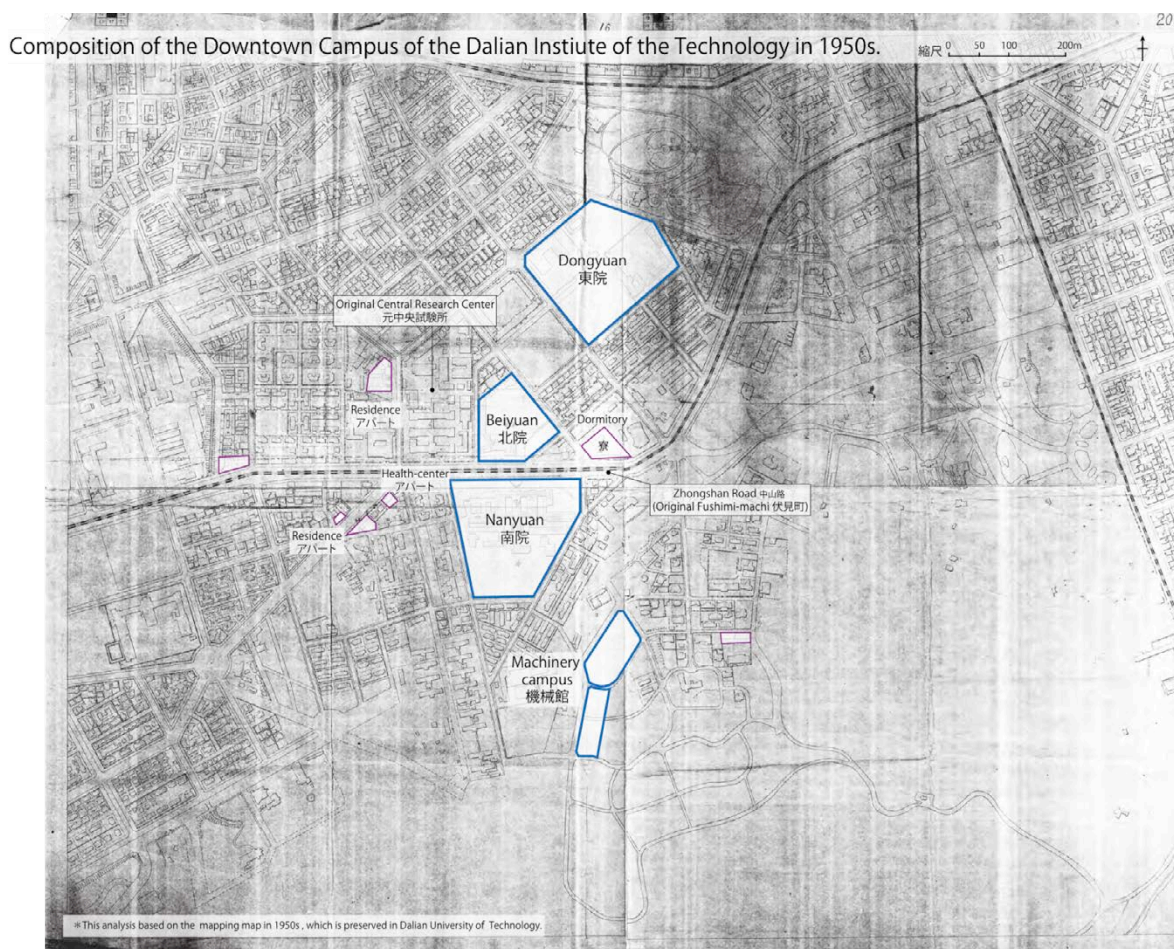
### Campus Composition of DUT and Their Historical Transitions





## 2.1 Overview: the Campus Composition of DUT

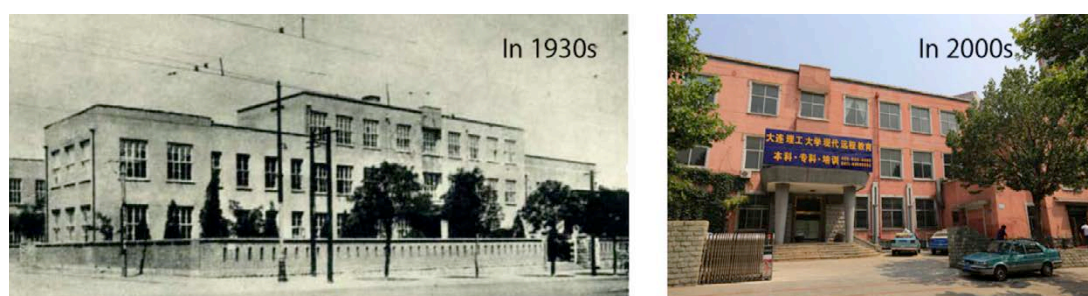
Dalian university of Technology has many campuses in China, and lots of them are located in the Liaoning Province (遼寧省). Among of them, the Downtown campus, the Lingshui campus and the Development Zone campus are located in Dalian city(大連). The Panjin campus is located in Panjin city(盤錦). Component of the campus is shown in the Table 2-1 of 'Dalian University of Technology Campus Map (Table 2-1).



**Figure 2-1 the composition of the Downtown Campus in 1950s**

The Downtown campus (市内校区) is the first campus of Dalian University of Technology and used in 1949 when the Dalian institute of Technology was just established. It consists of 4 Parts, Namely Nanyuan (南院), Beiyuan(北院), Dongyuan(東院), Machinery campus(機械館) and others, showing in the Figure

2-1. The Nanyuan campus was Constructed in 1914, which was used as the South Manchuria polytechnic School (南滿洲工業学校). The Beiyuan campus was used as the Dalian Hagoromo Women's School (大連羽衣女子高等学校) and constructed in 1933 (Figure 2-2). The Dongyuan(東院) combined with by two historical school campuses. The eastern one was used as Dalian Fushimi-dai Kougaku-do (大連伏見台公学堂) and constructed in 1912. The western one was used as Dalian No.1 high school (大連第一高中) and constructed in 1918 (Figure 2-3). The Machinery campus is a new established campus as Dalian Institute of Technology in 1951 (Figure 2-4).



**Figure 2-2 The Beiyuan Campus in the Past and Present**



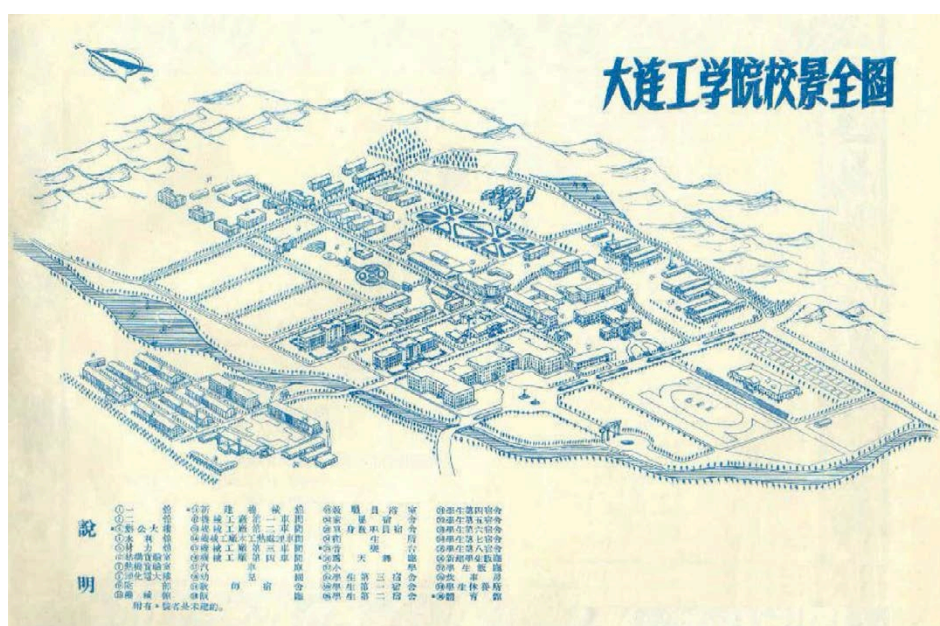
**Figure 2-3 The Dongyuan Campus in the Past and Present**



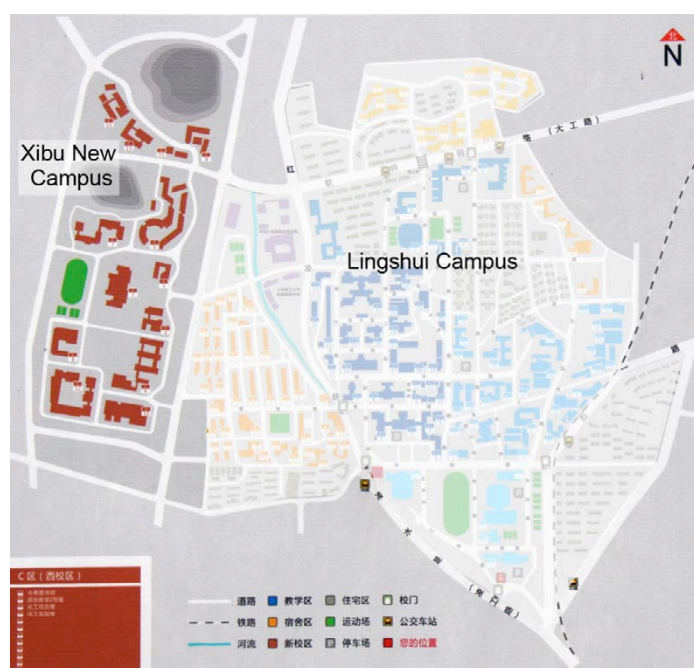
**Figure 2-4 The Machinery Campus, 2013**



The Lingshui campus (凌水校区) is the main campus of the university that includes two parts: the original Lingshui campus is established in 1951 (Figure 2-5) and the Xibu(western) new campus (西部新校区) is constructed in 2007 (Figure 2-6). It is a build-out campus of the university, more than 10kms away from the Downtown campus, Located in Lingshui town at the suburb area of Dalian city.



**Figure 2-5 The Site Plan of the Lingshui Campus**



**Figure 2-6 The Campus site of the Xibu New Campus in the Lingshui Campus**

The Development Zone campus is used as the School of Software Technology of the Dalian University of technology and constructed in 2000. This campus is 35kms away from the Downtown campus and about 41Kms away from the Lingshui campus, located in Jingzhou District (金州区) outside of Dalian City.

The Panjin (盤錦) Campus is a newly established one for the university in 2012. like the Lingshui Campus, it is comprehensive campus too. This campus about 300kms far away form Dalian city, located in the Suburb area of Panjin City(盤錦市), Liaoning Province (遼寧省).

This research will mainly focus on the Nanyuan in The Downtown campus and will give a brief research on Lingshui campus, too.



## 2.2 Illustrated the Transitional Process of Nan Yuan

### 2.2.1 Timetable of Transition

According to the research and the analysis of the historical literature, Nanyuan campus has been used as various higher educational institutes. Depending on its ownership, the campus history can be divided into three periods:

a. The Japanese occupation period, the campus owner was the SMR. Co. (南滿洲鐵道株式会社);

b. The Chinese Civil War period, the campus owner was Chinese Changchun Railway (中国長春鐵路) charged by Soviet government, but it was rent by the Communist Party of China Luda Prefectural Committee (中国共產党旅大委員會) (孙懋德, 1989).

c. The People's Republic of China (PRC) period, the campus owner is Dalian University of Technology (大連理工大学).

In the Japanese occupation period, this campus was used as the South Manchuria Polytechnic School (南滿洲工業学校) in 1912-1922 and the Manchuria Industrial School (南滿洲工業專門学校) in 1922-1945; In the Chinese Civil War period, the campus was used as the Dalian Industrial Academy (大連工業專門学校) in 1946-1947 and Kwantung Industrial Academy (関東工業專門学校) in 1947-1949; And then in the PRC Period, the campus firstly was used as the Engineering College of Dalian University (大連大学)<sup>19</sup> in 1949-1950. Then Dalian University was Dissolution, based on the original Engineering College, the Dalian Institute of Technology (大連工学院) was established in 1950. The Nanyuan campus and the other surrounding School sites were designated as the university Campus, known as the Downtown Campus from 1950 to 1988. Later, the institute changed its name to Dalian University of Technology (大連理工大学) in 1988. Nanyuan campus ownership transition progress is shown in the Table 2-2.

Table 2-2 Nanyuan Campus Ownership Transition Table

Ownership	Southern Manchuria Railway Company (Agency of Empire of Japan)		Chinese Changchun Railway Company Communist Party of China Luda Prefectural Committee		Ministry of Education of the People's Republic of China Dalian University of Technology			
	Upgrade	Sovereignty change	Name changed	Merge	Independent	New campus constructed	Name changed Upgrade	New campus constructed
Changed Reason								
Named	Fushimidai Campus		St. 129 Campus			Nanyuan of DOWNTOWN Campus		
Used to	Southern Manchuria Polytechnic School 南滿洲工業學校	Southern Manchuria Industrial School 南滿洲工業專門學校	Dalian Industrial Academy 大連工業專門學校	Dalian University (Engineering College) 大連大學(工學院)	Dalian Institute of Technology 大連工學院	Dalian Institute of Technology Chemical Department 大連工學院 化工系	Dalian University of Technology 1988 School of Chemical Petrochemical 1985 大連理工大學 化工學院 & 石油化工學院	Not in Use .....
Period	1912-1922	1922-1945	1946-1947	1949-1950	1950-1951	1951-1988	1988-2010	2010-

19xx: The period of the Campus belongs to an Organization

From Campus of Southern Manchuria Polytechnic School to Nanyuan(南院) of DOWNTOWN Campus of Dalian University of Technology



Also the Transition progress of Nanyuan can be divided into 5 Periods based on its constructional progress. They are the Start-up Period from 1911 to 1921; The Maturity period from 1922 to 1945; The Transition Period form 1946 to 1949; The Build-up period from 1950 to 1980s; The Steady period form 1990s to nowadays. The transition progress is shown as the Table 2-3.

**Table 2-3 The Transition progress of Nanyuan Campus**

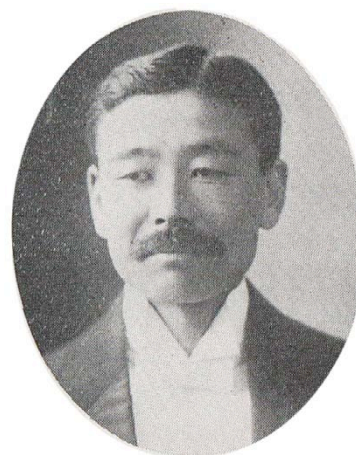
	Year	Used for	
Start-up Period	1911-1921	South Manchuria Polytechnic School 南滿洲工業學校	
Maturity Period	1922-1945	South Manchuria industrial School 南滿洲工業專門學校	
Transition Period	1946-1949	Dalian Industrial Academy 大連工業專門學校 Kwantung Industrial Academy 關東工業專門學校 Dalian University (Engineering School) 大連大学（工学院）	
Build-out Period	1950-1980s	Dalian Institution of Technology 大連工学院	
Steady Period	1990s~	Dalian University of Technology 大連理工大学	

In this chapter, the elucidation of Nanyuan`s historical transition progress and its key Point is followed on this constructional progress order.

## 2.2.2 Key Points Analysis

### a. Start-up Period: 1911-1921

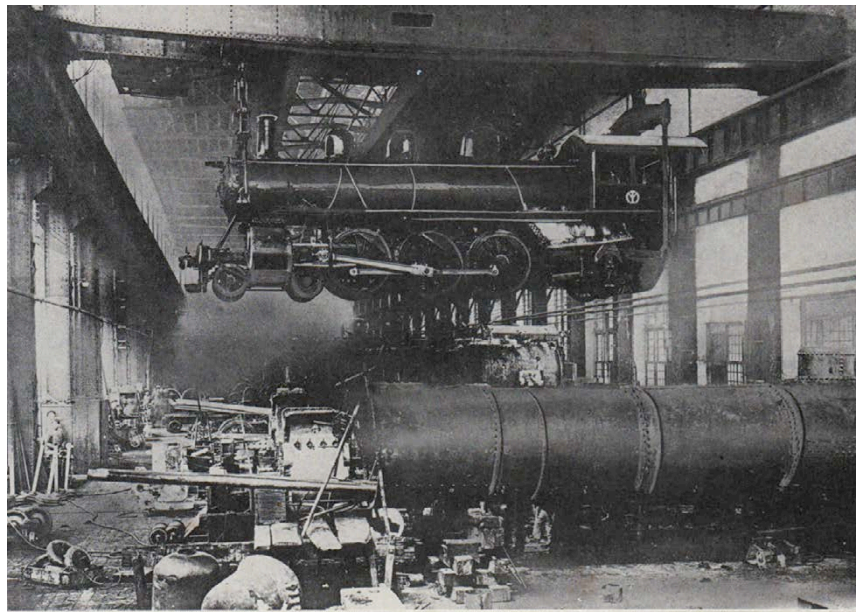
Before the South Manchuria Polytechnic School was established, Ima Kagehiko (今景彦) as the First chairman of this school started the preparatory work for it (Figure 2-7). According to the commandment from the SMR. Company, he traveled to Europe for inspection the advanced industrial educational experiments. Recommended by the Japanese ambassador Mr. Amano (天野) of Russia , he visited the Eidgenössische Polytechnische Schule (チューリッヒ工業学



**Figure 2-7 Ima Kagehiko**

校) that was a very famous school. But this trip was very disappointing, this school was so different from the one he heard before and he could not find anything that could be admired and wanted to learn from the Eidgenössische Polytechnische Schule. After that he discussed this experiment with a German industrial educator and hoped to get his opinion on it. The educator said simply: 'Yes, ah. It is true that it was a very famous industrial school ten years ago, but now……'. Such a simple sentence left Mr. Ima in pondering<sup>20</sup>. For this reason, in the first ten years after the South Manchuria Polytechnic School was established from 1911 to 1921, how to keep the school follow on the times without falling behind was became his aphorism. Perhaps based on the experience of the Europe inspection, he gave and administered a more in-depth thinking on the South Manchuria Polytechnic School. Definitely, his thinking not only focused on the educational system and the teaching quality, but also on the school campus and other infrastructures construction work.

In March 1911, the South Manchuria Polytechnic School was established in Dalian Fushimi-Dai zone and charged by the South Manchuria Railway Company. It was a middle level educational industrial school for training the engineer who worked for 'Manchuria development'. It is mainly recruited for Japanese who graduated from the higher primary school (高等小学校) or who finished the secondly year's study in a middle school which belonged to the Japanese old education system in the beginning of the 19<sup>th</sup> Century. The school capacity was 320 students at that time with 4-year educational system. It had 5 disciplines, namely the Civil Engineering discipline (土木科), the Architecture discipline (建築科), the Electrical Engineering discipline (電気科), the Mechanical Engineering discipline (機械科) and the Mining Engineering discipline (採鉱科). The School took the training of professional practical skills as the key teaching point, meanwhile the scientific principles also were taught. In addition to case studies, experimental operation and mapping works, the factory practice or internship occupied the large part of study. The practice bases were each branch of the SMR. Co., for example, the Shahekou Locomotive Works (大連沙河口満鉄工場), the Electrical Work Office (電気作業所), the Fushun Coal Mine (撫順炭坑), some buildings' construction sites, and so on (Figure 2-8 & Figure 2-9). The vocational ability was trained step by step when the students work with the staffs together. The teaching philosophy of it is that only the basement but correct knowledge were taught by the professors, the School encouraged and urged the students to study and learn spontaneous.



連大……(場職立組)場工口河沙

人千二約工職用使、すなを作製の品属附、輛車、車關機てしに場工の營經鐵滿

**Figure 2-8 The Shahekou Locomotive Works**



堀天露 (一其)礦炭順撫

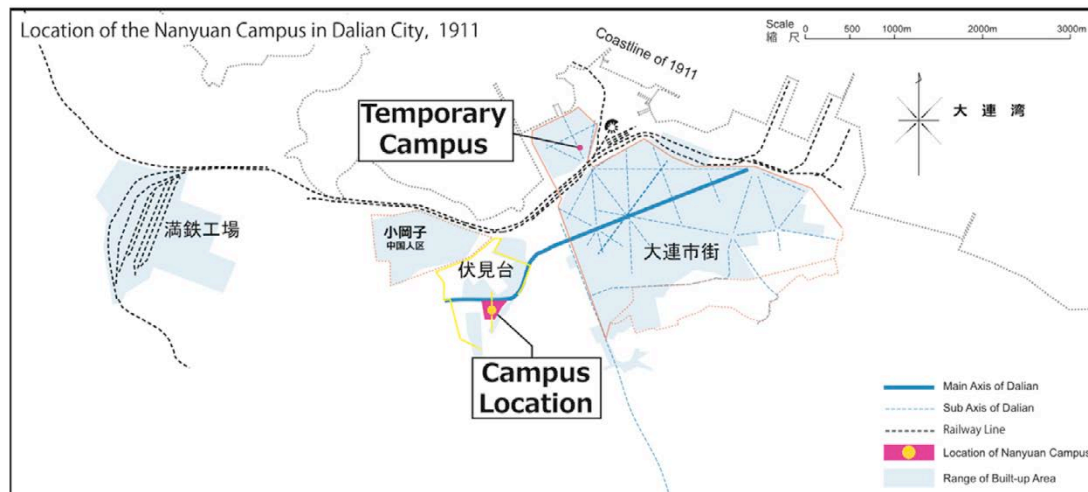
噸億九量藏埋 噸萬百五額年炭出

**Figure 2-9 The Fushun Coal Mine**

In order to make the routine enrollment smoothly, 77 students, as the interns, was allowed to start the school internship training in May of 1911. Among them 57 students belonged to the disciplines of Civil Engineering, Architecture, Electrical Engineering and Mechanical Engineering. They were temporarily housed in the original women-worker dormitory of the paper mill

where located in the Central Experiment center (滿鉄中央試験所) site at Fushimi-dai Zone (伏見台). Upon completion of language and mathematics learning for an hour every morning, they were arranged to take the practical training in the Shahekou Locomotive Works (大連沙河口満鉄工場). Another 20 students as the Mining discipline students were housed in the dormitory of the Fushun Coal Mine (撫順炭坑). Like the 57 students, after the one-hour learning in dormitory, they needed to take the practical training in the Fushun Coal Mine (撫順炭坑). In the next year April, 57 of 77 students (20 students were canceled by drop out or other reason) and other 13 appointment students, add up to 60 students who formally incorporated into the second year of study in the South Manchuria industrial school<sup>21</sup>.

In February 1912, one existing building of the SMR. Co. which was located in Kodama-machi (児玉町) was lent to the school as a temporary campus. It means the normal and formal teaching was started there. In November, approximately 41,000 square meters land was allocated to the school used for its campus construction purposes. The building was mostly completed in March 1914. The school began to move into the Fushimi-dai campus, Called as Nanyuan in this dissertation from Kodama-machi Campus (Figure 2-10). In September of the same year, the Fushimi-dai Campus constructed completely. Then, in April of 1915, the graduation ceremony was held for its first graduates, at the same time the campus inauguration ceremony was held. The complete campus included two parts of the teaching building (本館) and the cafeteria building (別館). The student dormitory was not build in the campus at that time, but the school continued to borrow some buildings from the SMR. Co. used as students' dormitory. This situation continued until 1917 when the permanent dormitory was established on the western side of the cafeteria in the Fushimi-dai campus, and all the students who studied in Dalian were housed to the inner of campus. Meanwhile, in order to provide rest and exercise place for the school there was one playground with various sports venues, one garden and other infrastructures.



**Figure 2-10 Location of the Nanyuan Campus in Dalian City**

As the beginning stage of the school, this is a period of continuously establishing and improving itself. One thing should be cleared, during this period, the campus construction and establishment only fit the basic functional need of teaching for this school. The exiting facilities were borrowed to become many necessary teaching facilities, which belonged to other branches or agencies of the SMR. Co. . Therefore, this period is called ‘the Start-up period’ in this research.

#### b. Maturity Period: 1922-1945

On February 18<sup>th</sup>, 1922<sup>22</sup>, in accordance with the Company Regulation (社則) No.25 which was published by the SMR.Co., declaring, that the South Manchuria Industrial School (南満洲工業専門学校) was established. Meanwhile, the rule of South Manchuria Industrial School (南満洲工業専門学校学則) was published too. This has happened as an upgraded from the South Manchuria Polytechnic School. The Professor Ima Kagehiko (今景彦) who was the former president of the South Manchuria Polytechnic School continually severed as the president of the South Manchuria Industrial School, when was appointed on February 23<sup>rd</sup>, 1922. Based on the content of the Imperial Order (敕令) No.366, the establishment of the South Manchuria Industrial School were recognized by the Imperial Japanese government. With this, the upgrade progress was finished and this school was officially included in the ranks of the higher education system of the Japan old education system. Due to this, the large-scale construction period of the campus was opened.

According to historical date records (満鉄南満洲工業専門学校三十年誌, 1942), the composition of the school was changed into 6 disciplines from its original 5 discipline in middle educational era. They were the Architecture discipline (建築工学科), the Civil Engineering discipline (土木工学科), the Civil



Engineering of Agriculture discipline (農業土木工学科), the Mining Engineering discipline (鉱山工学科), the Electrical Engineering discipline (電気工学科) and the Mechanical Engineering discipline (機械工学科). Then after several changes, the Communication Engineering discipline (通信工学科)<sup>23</sup> on March 31<sup>st</sup>, 1940 and the Applied Chemistry discipline (応用化学科)<sup>24</sup> in April of 1940 were incorporated into the School's academic setting. Since the increased discipline, a large number of experiments and practice factories were built. Thus led to the Campus construction area which reached more than 2 times than the previous period. At the end of this Period, the campus structure was fully formed. Therefore, it is identified as 'the Maturity Period' by this research.

#### c. Transition Period: 1946-1949

On the August 15<sup>th</sup>, 1945, the Imperial Japanese government was defeated and unconditionally surrendered at the end of World War II. The Dalian city as a just liberated city in Northeast of China, eager to be undertaken. In order to recover and develop the regional economy as soon as possible, and to support the Chinese Civil War for National Liberation, it was urgent to develop the senior technicians in various industries. For training the technicians, a higher educational institution was necessary for Dalian city. The reopening for Ryojun College of Engineering that had been trained numerous engenderers for Japanese colonists looked impossible and hopeless, because it was occupied by the Soviet troop, large part of books and equipments were 'lost'. But there was another choice existing at that time, reusing the original campus of the South Manchuria Industrial School was possible. Therefore, in the positive recommendations of leaders of the CCP Luda Committee (旅大地委) and Mr. Qiao Chuanyu (乔传钰) who graduated from the Ryojun College of Engineering and was the chairman of the Liaodong Technology Association (辽東技術協会) at that time, the CCP Luda Committee decided to establish a new Chinese higher industrial school called the Dalian Industrial Academic (大連工業専門学校), based on the infrastructures of the South Manchuria Industrial School<sup>25</sup>.

The campus of the South Manchuria Industrial School, after the World War II, was owned by the Chinese Changchun Railway (中国長春鐵路) Company charged by Soviet government. After the CCP Luda Committee made the decision to establish the Dalian Industrial Academic in the secondly of provisional provincial assembly in February of 1946, the campus (with its equipment) was borrowed by Dalian Democratic Government from the company officially. And in November 6<sup>th</sup>, 1946, the campus founding ceremony was held; the first president is Mr. Qiao Chuanyu (乔传钰). For the School academic system, the school

renamed the 'discipline(学科)' to 'department (系)'. The original ones like department of Mechanical Engineering (機械系), the department of Electrical Engineering discipline (電氣系), the department of Applied Chemistry discipline (応用化学系) and the department of Mining and Metallurgy Engineering (採鋁冶金系) have been retained, but the department of Architecture (建築工学科) and the department of Civil Engineering (土木工学科) were not reopened again. At that time, there are 34 teachers in the school, including 14 Japanese professors who belonged to the original School. There were two parts established in the school: Part 1 was opened for the high school graduates, Part 2 allowed the middle school graduates enrollment. Because there are not many Chinese high school graduates, in 1948, these two parts were merged together<sup>26</sup>.

According to the record of 'A Brief History of Kwantung Industrial Academic' from 1946 to 1949 (屈伯川 1986), not only these things happened in this campus during this 4 years. Due to the unstable political environment for the security reasons, the school was changed its name to Kwantung Industrial Academic in April of 1947. In the next month, May of 1947, prof. Qu Bochuan was nominated as the president of the school. Suited and catered to the prevailing need of the social-political environment, the department of Mechanical Engineering (機械系) and the department of Applied Chemistry were decided to concentrated develop firstly. It means other departments were closed temporarily. In May of 1948 when Mr. Wu Xiuquan (伍修权), who was the chief of staff of the PLA Northeast Military Region inspected to Dalian, decided that the school transferred its ownership to the Jungongbu of the Northeast Military Region (東北軍区軍工部). For the secrecy, it inner was called the Ninth Office of Jungongbu (軍工部第九辦事處), but for the externally, it was charged by the Dalian Jianxin Company (大連建新公司) nominally. To support the Chinese Civil War for national liberation, there were some military supplies, which were produced in the Kwantung Industrial Academic's school factory from the beginning of the spring of 1947. Through these historical facts visibly, the School at that period was a group serviced for the political to a large extent.

In the November of 1948, a work group was composed by 24 students (mostly came from the department of Applied Chemistry) that led by the president Qu Bochuan started the work to take charge the original SMR. CO. Central Experiment Center (滿鉄中央試験所) from the Soviet Red Army. And finished in the March of 1948. Then in the fall of 1948, due to stable environment of the Northeast of China by the victorious of the PLA, the application of establish the Dalian University was submitted by the CCP Luda Committee (旅大地委).

The feedback came soon in September. The application was approved by the CPC Central Committee (中国共产党中央委员会). The original telegraph text<sup>27</sup> is shown in Figure 2-11.

东北局：  
转来旅大地委两电均悉。同意创立大连大学，办医工两院及筹委会名单等各项建议，望努力进行。校长人选正物色中，教授当尽力延聘。该校教育方针计划须报告中央。  
中 央  
1948年9月14日

**Figure 2-11 Official Approval of the Application of Establish the Dalian University**

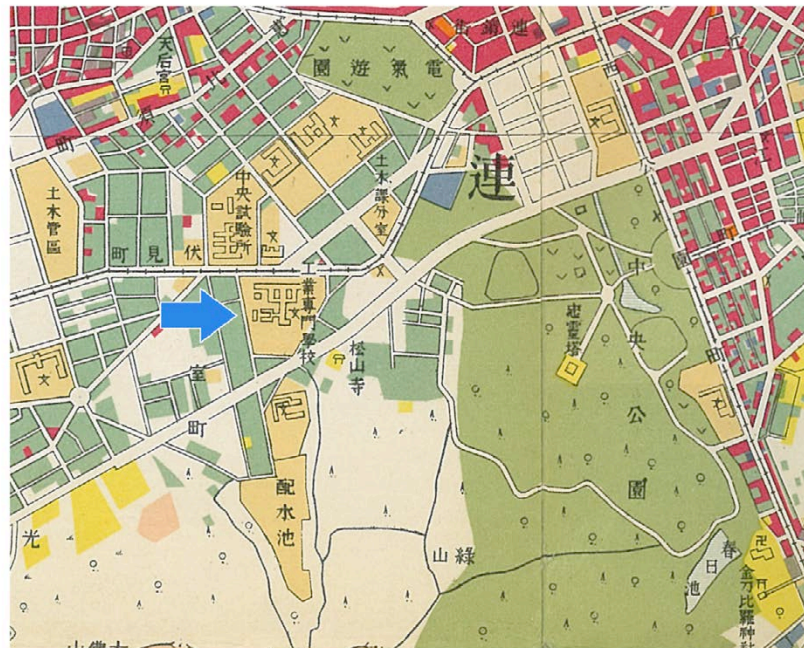
On November 4<sup>th</sup>, 1949, based on the Kwantung Industrial Academic, the Electricity School (電專)<sup>28</sup>, the medical School (医專), and the Russian Language School (俄專) to established the Dalian University was decided by the local government. Among them, the Kwantung Industrial Academic, the Electricity School combined together to establish the Engineering School of Dalian University (大连大学工学院). At the end of this year, the Electricity School overall move to the campus of the Kwantung Industrial Academic. Then the campus was began a renovation and expansion work for the university establishment. On April 15<sup>th</sup>, 1949, the Dalian University was officially founded. Meanwhile, the Kwantung industrial Academic was officially Closed. According to statistics, in the beginning of the university establishment, there are only 29,592 square meters building used for not only teaching, but also living<sup>29</sup>.

About the construction details of the campus, there are no literature record which has been found in the historical documents. However, in Sun Maode and others' study (孙懋德等, 1989), he found this period was a difficult period for it due to the KTM enforcement of the Northeast of China blockade. In order to achieve self-sufficiency of normal life, the large playground was opened to grow vegetables, feed pigs and so on by the teachers and students. By this way, it meet the basic living needs of daily lives, in addition, they could also eat half Kg pork per month for one person. In other words, it means in that difficult situation, the school haven't the possibility to carry out the campus build-out.

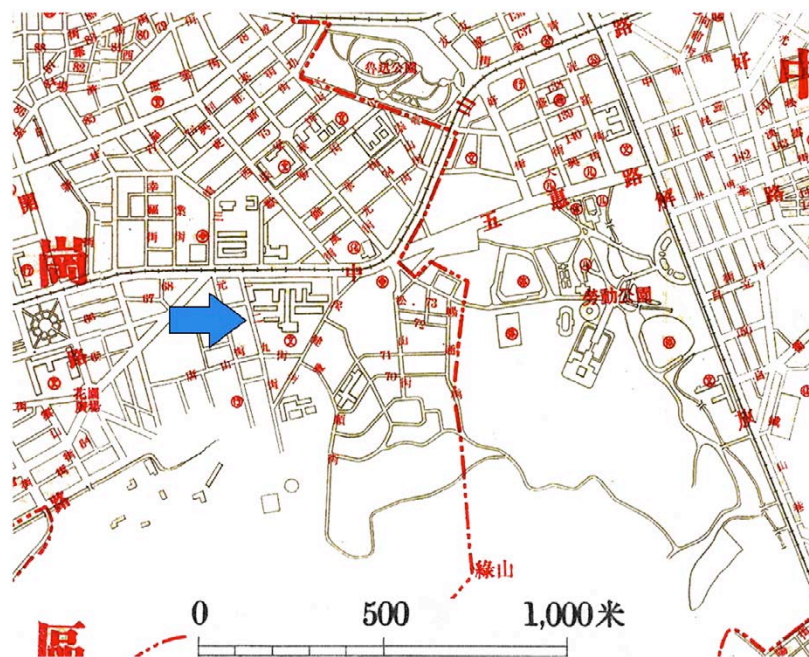
This research conclusion is proofed by comparing the Dalian city Maps from 1940s to 1950s in the Figure 2-12. This research believed the reason for no build-out happened in the campus maybe influenced by the unstable social-political situation at that time. In summary, this was a typically



transitional period for the campus from Japanese colonial period changed into Chinese period. So this period is defined as the ‘transition period’ of the campus.



Based on the Map: 大連市街用途別現況図1937, by ‘関東州庁土木課’



Based on the Map: 大連市街図1956, by ‘旅大市城市建设局’

**Figure 2-12 Compare of the Fushimi-Dai Zone in the Dalian Maps, 1940s & 1950s**

d. Build-out Period: 1950-1980s

After the People’s Republic of China was established on October 1<sup>st</sup>, 1949,

the country tended to become peaceful. National economy and cultural construction was recovered step by step, accompanied by the college and department adjustment of Chinese university. According to the historical record (孙懋德等 1999), the transform of this university was as the follows: According to suggestion from the Soviet experts based on the experience of higher education of the original Soviet Union, the only 1 years old Dalian University was declared close by the Northeast People's government in August of 1950. Then it be divided to 3 parts, among them, the Engineering school was organized to the Dalian Institute of Technology that is the former name of Dalian University of Technology before 1988. The 'institute – department' academic system was used in the university.

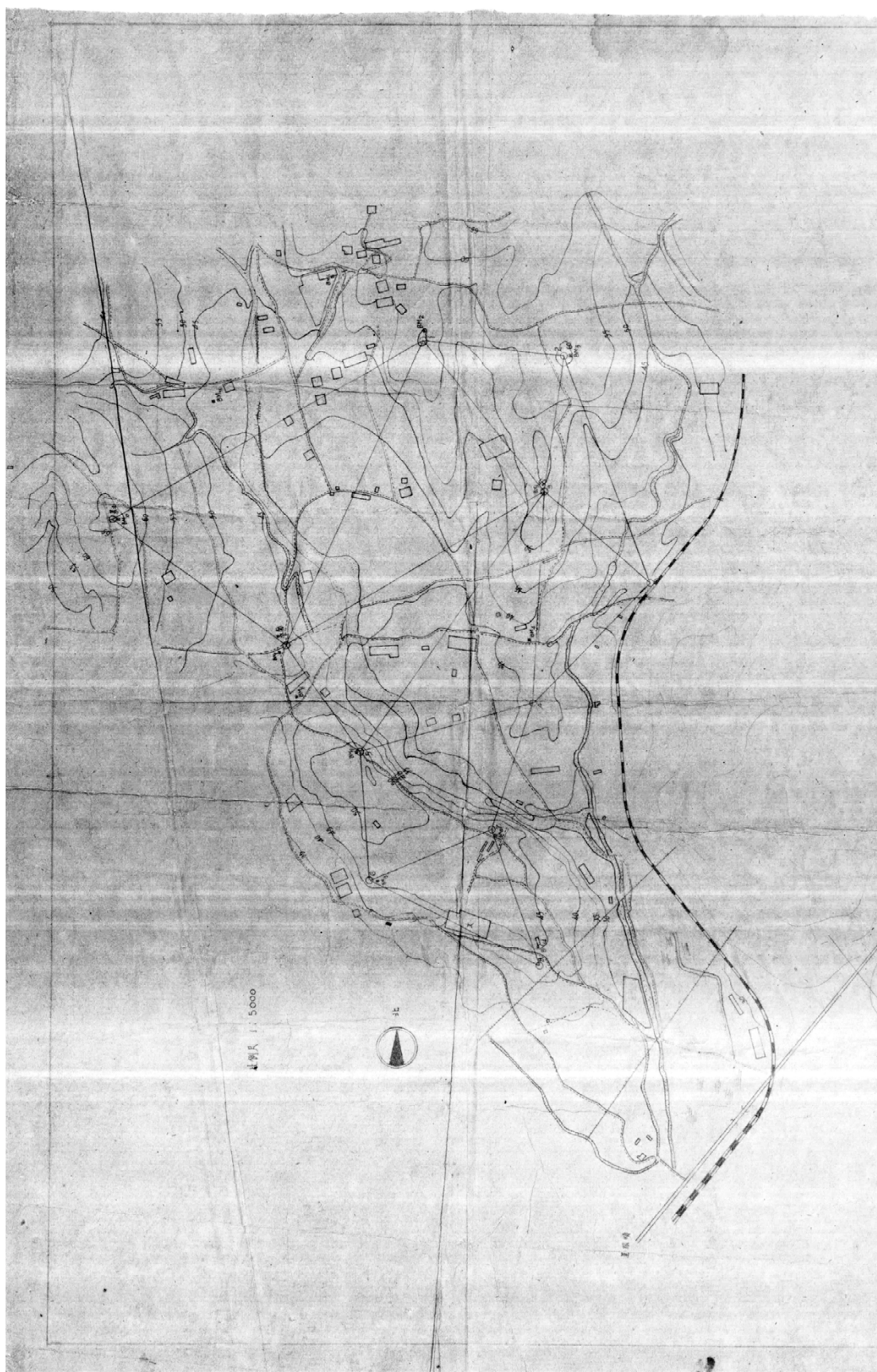
There were eight schools in the beginning: They were the department of Electrical Engineering (电机工程系)<sup>30</sup>, the department of Telecommunications Engineering (电讯工程系), the department of Mechanical Engineering (机械工程系), the department of Civil Engineering (土木工程系), the department of Metallurgical Engineering (冶金工程系), the department of Chemical Engineering (化学工程系), the department of Applied Physics (应用物理系) and the department of Applied Mathematics (应用数学系). In addition the preparatory department was set up too. The main campus was the original campus of South Manchuria Industrial School and is called Nanyuan campus(南院). It means that there was other campuses which were given to the university too. They were the Beiyuan Campus (北院) which was the original campus of Dalian Hagoromo Women's High-school (大连羽衣女子高等学校); The Dongyuan (東院)<sup>31</sup> Campus which were the original campus of Dalian No.1 High School (大连第一高中) and original campus of Dalian Fushimi-dai Kogaku-do (大连伏見台公学校). Besides there are a new-constructed campus named the Machinery campus (機械館)<sup>32</sup> and other ancillary facilities, for example the hospital and kindergarten, in the surrounding, etc. Commonly, they are called the Downtown campus (市内校区).

On November 19<sup>th</sup>, 1950, the China Central People's Government Administration Council formally appointed prof. Qu Bochuan as the Dean of the Dalian Institute of Technology. The Dean is responsible for the implementation of the school system. Soon, the college and department adjustment has been implemented, until to September of 1952, only 4 department were remained in the institute, they were the department of Mechanical Engineering (机械工程系), the department of Naval Architecture(造船工程系)<sup>33</sup>, the department of Chemical Engineering (化学工程系), the department of Civil Engineering (土木工

程系). In the same time, the ‘institute – department-major’ academic system was used in the university and 12 majors contained in the institute. Later, the department of Civil Engineering (土木工程系) changed name to the department of Water Conservancy (水利系), it contained two Hydraulic Engineering majors and a Road Engineering research group and an Architecture research group.

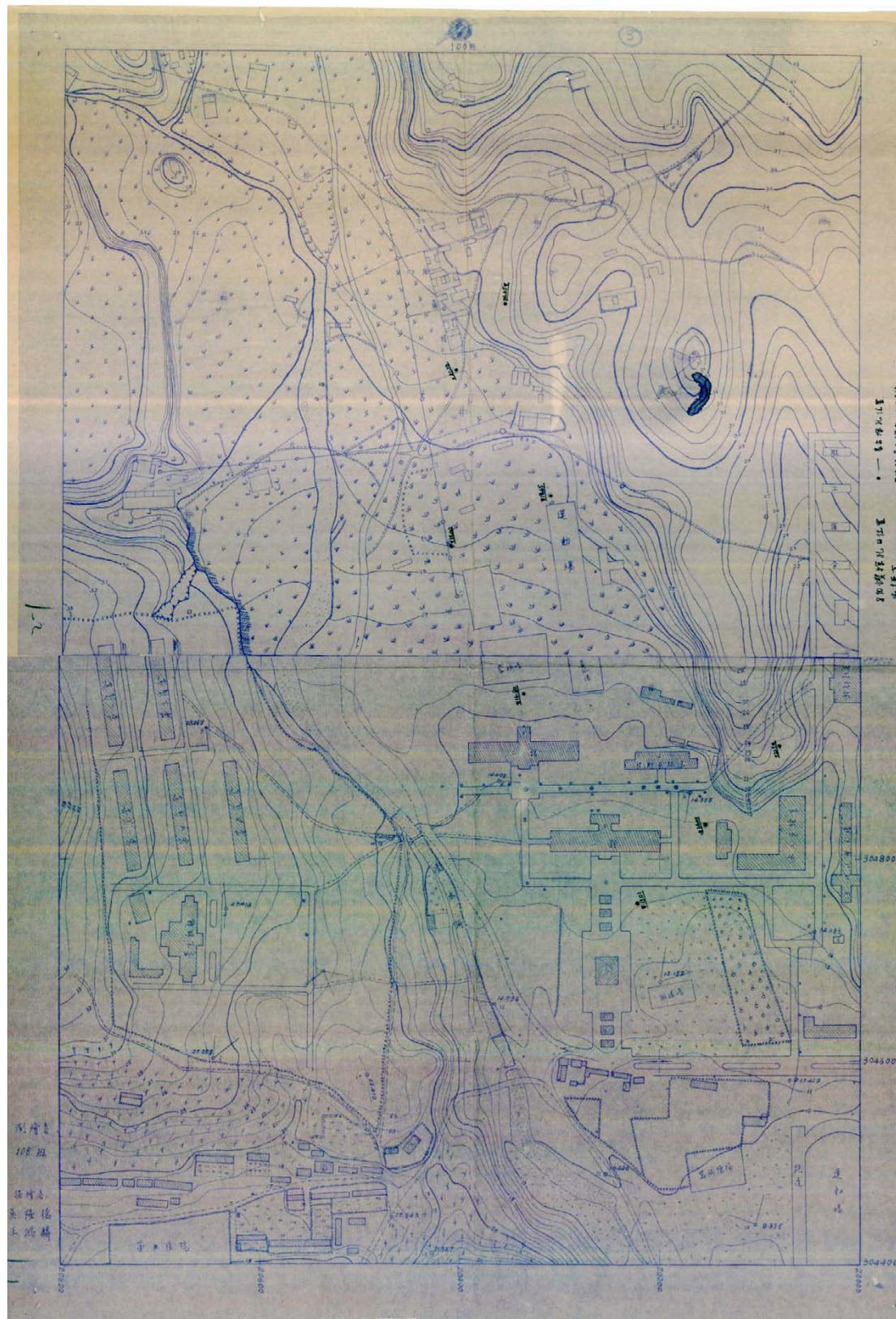
According to an interview with Professor Xu Qingxi (胥庆曦)<sup>34</sup>, this study is known some details about the campus construction. Because the Nanyuan campus was designed for about 500 students, but in this period the number of the students was much over than 500. Also there have some other campuses, but the Downtown campus was too small for the institute. In 1951, an important decision has been decided: Based on the Downtown campus, to construct a new campus for the institute development. The official records is in the fall of 1951, the Dalian Institute of Technology’s build-out decision was approved by the Ministry of Industry of the Northeast People’s Government (東北人民政府工業部). Through the field survey on Dalian city by the Dean Qu Bochuan (屈伯川) and Prof. Wang Tan (汪坦), the new campus site was chosen in the Lingshui town (凌水屯) where three-sides hugged by mountains and faced to the sea. At the same time, the 22 students from the department of Civil Engineering mapped the site topographic map that was used for the Lingshui campus planning (Figure 2-13). Prof. Wang Tan as the principal campus planner, in the same year completed the campus planning and main architectural design works (Figure 2-14). In the spring of 1952, the groundbreaking ceremony was hold, which meant the construction of Lingshui campus was begun. In Prof. Xu Qingxi (胥庆曦)’ memories, they have been discussed about the campus planning even in Prof. Wang Tan’ home. Up to October of 1952, the No.1 building of Lingshui campus was constructed. The department of Mechanical Engineering and the department of Naval Architecture were relocated from the downtown campus to the Lingshui campus. That is, take this time as the beginning, the main campus of Dalian Institute of Technology from the Nanyuan campus evolved to the Lingshui Campus gradually. The campus’ greening began in March of 1954, a great work is in one month about 40,000 plants were grown in the 1,200,000 square meters campus. Nowadays, the trees you see in the Lingshui campus almost were planted at that time. In the next decades, with the completion of the Lingshui campus most departments relocated to the Lingshui campus, leaving the Nanyuan campus or Downtown campus only used for the department of Chemical Engineering alone.





**Figure 2-13 The Topographic map of the Lingshui Campus around 1951,  
1/5000**





**Figure 2-14 The Initial Campus Planning of the Lingshui Campus  
around 1951,1/2000**

The current research view deemed the campus constructional work main in Lingshui campus. The truth is that there is some part of constructional work which was built in the Downtown campus also. Mainly are the residential buildings for the teachers. Among them, the largest construction program is the residential community constructed in November of 1978 where located in the Downtown campus (but not in Nanyuan campus). This community solved the housing problem for 100 families. There are two details about the Nanyuan campus' build-out:

a. In Prof. Xu Qingxi` memory, the Dalian Chemical Engineering School (大连化工学校) which has good academic and production capacities was merged to the Dalian Institute of Technology in 1972<sup>35</sup>, in order to satisfy the operational needs of it, the chemical Machinery factory were build in 1979<sup>36</sup> located in the Nanyuan campus. This building used the original playground of Nanyuan Campus.

b. 'The department of Chemical Engineering which will used the Downtown campus in a long time' as a decision has been decided by the First Congress of Teachers and Staffs (第一届教职工代表大会) of the Dalian Institute of Technology in January of 1980. Therefore, various of infrastructure were began to renew and establish in the Downtown campus for teaching and living. Some new residential buildings include the one that is called the 129st. residence<sup>37</sup> in Nanyuan campus, were constructed quickly. Then, in the year of 1987, the chemical laboratory building<sup>38</sup> was constructed, which was the biggest construction program in Nanyuan Campus after 1945.

Except to the build-out of the cafeteria of Nanyuan campus in 1951, there are some new building which were added in the Nanyuan campus in the 3 decades after the institute was established. Therefore the Nanyuan campus' genius loci is different from that before, by this way, the period of 1950 to 1980s is deemed to the Build-out period of Nanyuan campus.

e. Steady Period: 1990s-now

Based on the 'Interim Provisions on the Set of Ordinary Higher Education Institution' published by the State Council of PRC, the State Education Commission approved the Dalian Institute of Technology (大连工学院) renamed to Dalian University of Technology (大连理工大学). This name was officially announced to use on the March 1<sup>st</sup>, 1988. The 'university - school (college) - department - major' academic system is used in the university.

In this period, there is no permanent construction work which is finished in Nanyuan Campus for the land limit. However, in the Lingshui campus huge

construction works has been finished due to the demand of university rapidly expanding progress. Since there is no dedicated planning in Nanyuan campus, some no planning temporary houses are build-out to meet the facility need. Just by these temporary buildings that preserved to now, they disrupted the genius loci and structure order of Nanyuan campus.

At the end of 2010 the Xibu New Campus (西部新校区) was constructed in the west of Lingshui campus. The Chemical Engineering school and the Petrochemical Engineering department, as user of the Downtown campus, relocated to the Xibu New campus. And the downtown campus isn't used as teaching-use campus for the Dalian University of Technology, which means the downtown campus, including Nanyuan campus, is officially abandoned. Nowadays, the Nanyuan campus only used by some factories and some university offices.

Due to the construction work is stagnated during this periods, the research deemed the period as steady period.

### 2.3 Briefly Introduce the Transitional Process of Lingshui Campus

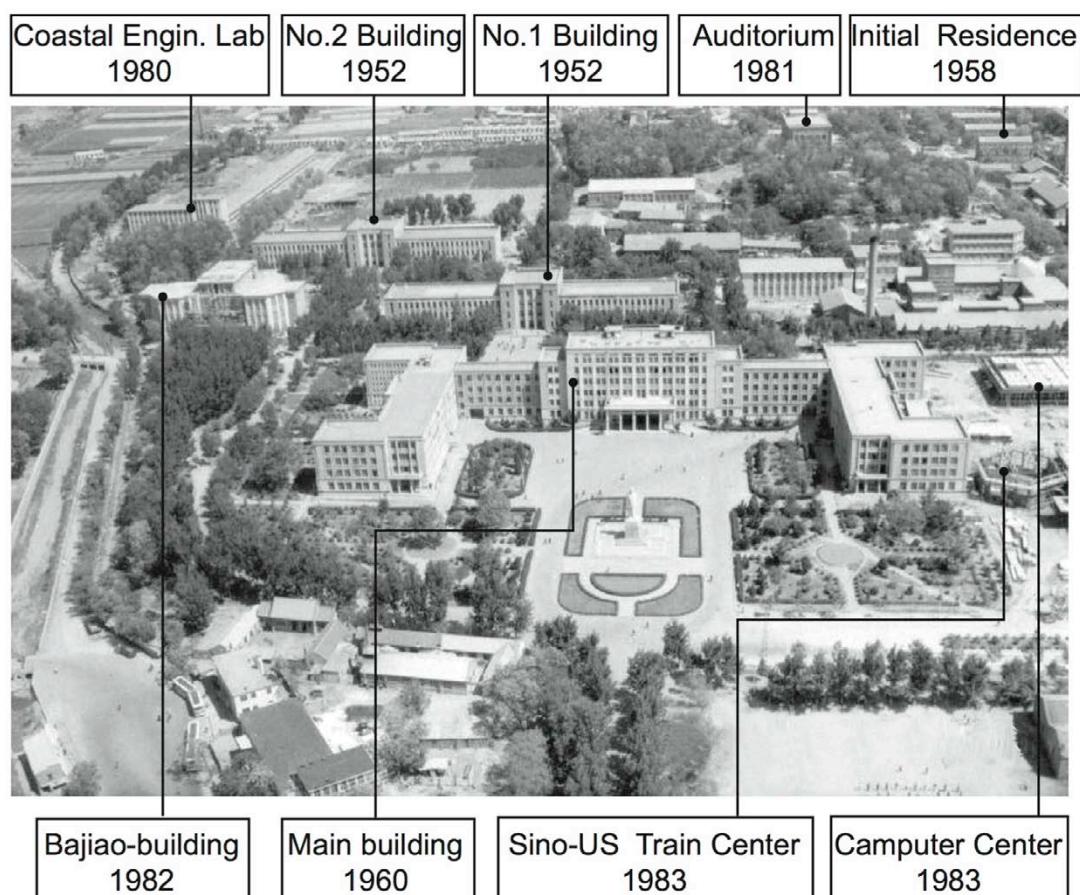
The Lingshui campus is the main campus of The Dalian University of Technology, beautiful and maintains a mixture of classical and new buildings. Many are equipped with comprehensive teaching and researching facilities and laboratories. As mentioned above, the construction work of the Lingshui campus was began in 1951, with a modernism campus planning. the first batch building, the No.1 teaching building (一館), the No.2 teaching building(二館), heat engine laboratory and the student dormitory No.1~3, began to construct at 1952. In order to strengthen the building capability, the institute decided let the 17 students who belonged to the Architecture group of the department of Civil Engineer took part in the campus-built work as the final year's study, were guided by Prof. Wang Tan (汪坦) and Prof. Xiao Zongyi (萧宗谊). Among of them, Mr. Zhang Xiangjiu (张祥九) as the monitor of them, after the graduation continually worked in the institute and changed the campus construction work until he retire as the vice chairman of the Dalian University of Technology. In consider of the situation of The Lingshui campus is far away from the Dalian city, Besides the institute bought some American made buses as the shuttle bus<sup>39</sup>, there were some residential buildings for teacher's living also be considered in the campus Planning. From the year of 1952, some teaches who are lecturer or above, began to move into the new apartment that the area was 64 m<sup>2</sup>, Up to the end of 1952, there are 24,719 buildings has been constructed in the Lingshui campus. Then, in 1956 for improve the living conditions for the high level professors, there was 9 villas, totally of 18 doors, were constructed completely, each door have 120m<sup>2</sup> building area. The living condition for faculty members of The Lingshui campus has a greatly improved.

Because Prof. Wang transferred to the Tsinghua University in 1958, after that, the campus plan work mainly charged by the Dean prof. Qu bochuan(屈伯川). The construction of the Main building (主楼/大学本館) that build on February 18<sup>th</sup>, 1960 was decided by him. Influence by the design trend, the Soviet model which affected on lots of Chinese universities at that time, the Main building`s planning and establishment disordered the original campus plan that completed by Prof. Wang Tan. The new building has obviously characteristics of the Soviet model, lead the campus planning into half-modernism, half-Soviet pattern style.

In the period from 1975 to 1985, beside the main construction work for teacher's residential and student's dormitory, the investment in infrastructure



was mainly supported the construction of the Sino-US Co-construction Train Center program and the construction of the School of Petrochemical program, both of them were got the financial support from the World Bank `s loans and others. This period was an important build-out period for the Dalian Institute of Technology. Several of specialized laboratories, research centers, research and public institutions were established in the campus. Later with the other investment in place, the computer center and the state key laboratory of several schools has been built quickly. The building area of the research, teaching and other production houses was more than 200,000 m<sup>2</sup> (no residential building area). This area was 6 times more than the beginning (Figure 2-15).



**Figure 2-15 The Buildings of the Lingshui Campus**

Followed on the china's rapid economic development in 1990s, a new development period was opened to the Dalian University of Technology. Echoed with the university upgrade, various auxiliary infrastructures and teaching facilities were almost perfected. According continuous rebuilding and build-out,

the campus and its infrastructure has reached the basic modernization level.

About the ancillary facilities project, not the buildings but its supporting facilities, there is also a great development. The water supply shortage situation in Lingshui town was solved by rebuilding a 4km waterworks to Lingshui campus in 1960s. Then round 1980s, a nearly 20-kilometer gas pipeline project was built, which linked the Lingshui campus with the Dalian downtown. More than 2,000 families and each cafeteria in the campus could use the pipe gas for the normal living. In the end of 1980s, the heating supply system, the electricity system and the communication system were improved too. After 1990s, especially in 2000s, the campus infrastructures and facilities have reached the modernization level, favorably with the campus belonging to the development countries.

## 2.4 Summary

For the construction works of the Nanyuan campus after 1945 and the Lingshui campus from 1951 to 1980s, one general point is the main part of these buildings was designed and constructed by the University itself (孙懋德 1989). It meant the technicians who charged the campus contraction works were belonging to the Dalian Institute of Technology. This is a very typical characteristic of the campus development.

Throughout the Campuses evolutionary history of the Dalian University of Technology, the university established its own huge campus network that takes the Dalian city as its center base. Definitely is the origin of this network does never be changed: Nanyuan Campus, whatever this network will extend how large it is. The year of 2014, 100<sup>th</sup> anniversary of the Nanyuan campus established, it should be a positive occasion for the campus, but unfortunately, this year is also a heavy period for this campus. After the year of 2010 when the campus not used for teaching any more, some real estate business companies, Dalian City government and other institutes spying on the campus site which were located in the geographical center of Dalian, Nanyuan campus in the danger of demolished realizations. This research believes that Nanyuan as the important urban heritage, especially it was the first public infrastructure of Dalian west new town, represents the city historical image of the past years. It changed to a kind of can't be ignored and forgotten memories of Dalian city. Therefore, Dalian city renews progress and this urban heritage should keep in harmonious relationship. In a certain sense, Nanyuan campus is not only a campus itself, but also has already become a Dalian amorous feeling.

In order to clarify the significance of Nanyuan campus for Dalian city, in the next chapter this research will successionaly identify the established background and the evolution of the Nanyuan campus. Also the root reason that caused the relationship between it and Dalian city will be identified.

## *Chapter 3*

Analysis the Morphology Transition Progress of  
Nan Yuan before 1945



### 3.1 Architecture Department of South Manchuria Railways Co and SMPS

#### 3.1.1 Designer: Yokoi Kensuke and the Architecture Department of South Manchuria Railways Co.

According to Xu Qingxi's study<sup>40</sup> on the modern architecture of Dalian city in China and the records in the historical document `南満洲工業学校創立十年誌`, it can be deemed that the designer group of the Nanyuan campus was the MANTETSU KOUMUKA(満鉄工務科) in the beginning, headed by the architect Yokoi Kensuke (横井謙介) (Figure 3-1). There are a number of records about the MANTETSU KOUMUKA (満鉄工務科) in Japanese architecture history, but very few records for the architect Yokoi Kensuke. Although it is easy to know that he has designed a series of important programs and works, there is no introduction of his design ideology.



故横井謙介氏

**Figure 3-1 Yokoi Kensuke,  
1878~1942**

The predecessor of the MANTETSU KOUMUKA(満鉄工務科) is the KENCHIKUKAI (建築系) in MANTETSU SOUMUBU DOBOKUKAI (満鉄総務部土木課). Then, on December 15<sup>th</sup>, 1908, the KENCHIKUKAI (建築系) was changed to a independent organization as the SOUMUBU GIJUTSUKYOKU KOUMUKAI (総務部技術局工務課). Later in 1914, it was renamed to the SOUMUBU GIJUTSUKYOKU KENCHIKUKAI (総務部技術局建築課) …… The transition progress of the organization is shown as the Table 3-1<sup>41</sup>.

One thing that needs to be emphasized is that this organization have 4 architects who graduated from the Architectural discipline (造家学科) of the Tokyo Imperial University (東京帝国大学) in the begin. According Nishizawa Yasuhiko (西沢泰彦)'s study<sup>42</sup>, before 1905, only the Tokyo Imperial University set up a higher education institute of the architecture. Only 112 graduates graduated from the university before the KENCHIKUKAI (建築系) of The SMR. Co. was established. Therefore, as an architectural design organization in Japanese colony, it has these 4 architects enough to make it as the remarkable design organization in the Manchuria region (definitely, the Kwantung Leased Territory

was included)<sup>43</sup>. The 4 architects were as follows: Mr. Onoki Kouji (小野木孝治, 1874-1932) who was the keichou (係長) of the organization; Mr. Ota Tsuyoshi (太田毅, 1876-1911) who was the younger sister's husband of Mr. Onoki; Mr. Ichida Kikujiro<sup>44</sup> (市田菊治郎, 1880~1963); Mr. Yokoi Kennsuke (横井謙介, 1878-1942) who is the design of the Nanyuan campus.

As a veteran of the construction industry in Manchuria area<sup>45</sup>, he has a very high status and prestige in Manchuria region. He was born on November 21<sup>st</sup>, 1878 in the Aichi Prefecture of Japan, as the eldest son of the family. His father is Dr. Yokoi Shunzo (横井俊蔵), a surgeon major general in Japanese Army. After the study in the Second High School (第二高等学校) of Japan, he entered the Tokyo Imperial University and studied in the Architectural discipline (造家学科). Then in the year of 1905, he graduated from the university and got a job in the SUMITOMO HONTEN

RINJIKENCHIKUBU<sup>46</sup> (住友本店臨時建築部). Due to the personal relationship<sup>47</sup> between his father and Goto Shinpei (後藤新平) who was the chairman of the SMR. Co. at that time, he transferred into the MANTETSU SOUMUBUDOBOKUKAI (満鉄総務部土木課建築系) in March of 1907. As a main architect of the design organization, soon he presided over the Fushun-Qijinzhai's urban planning and Main buildings design works which was the first important program in his career life. In January of 1913, he began to study abroad in the West (mainly in London). Then in October of 1914 he returned to Dalian early due to the impact of the World War I. he continuously worked in the MANTETSUKAISHA (満鉄会社) until May of 1920 when he quitted in response to the call of the company. Immediately, the Yokoi Architects (横井建

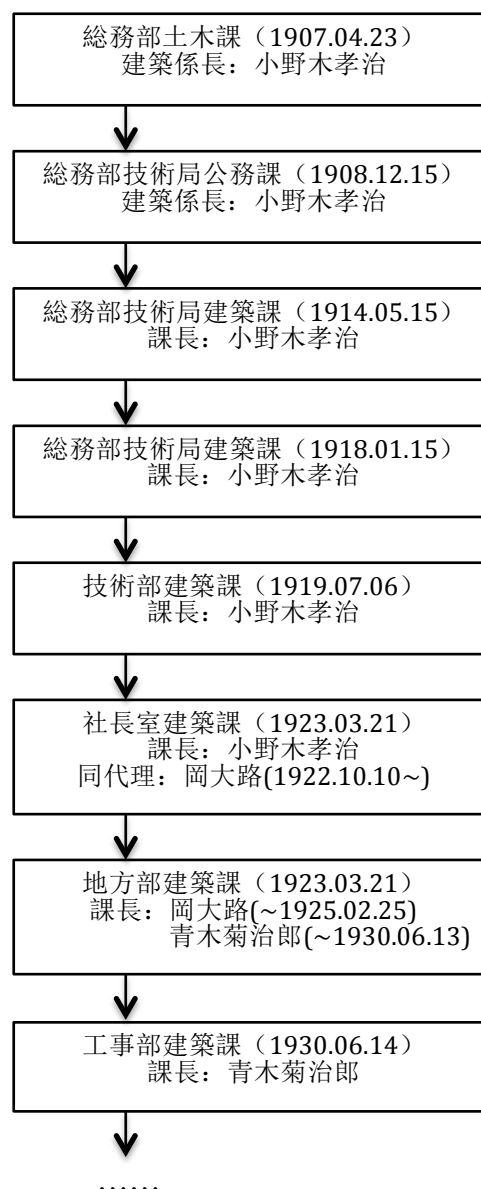
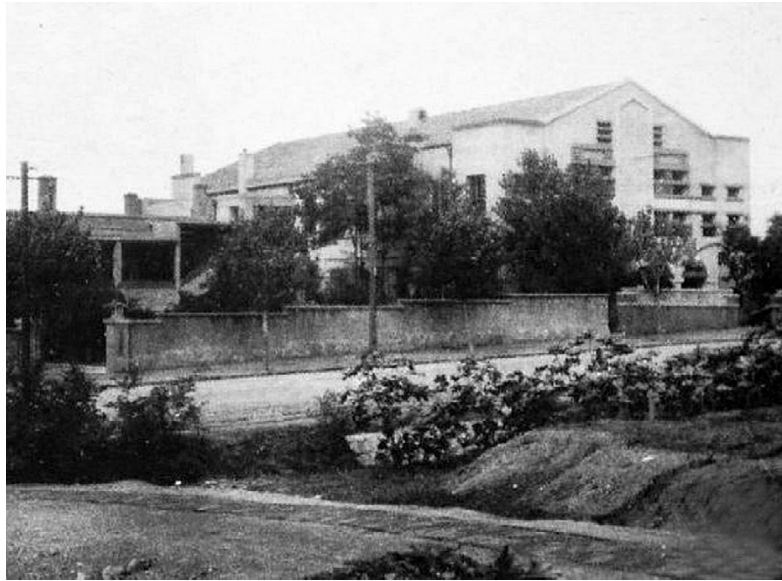


Table 3-1 Transition of MANTETSU KENCHIKUKAI

築事務所) was open, it has completed a number of important projects in this period. Actually, the official record of Mr. Yokoi's works was just started in this year. After Onoki Kouji (小野木孝治)<sup>48</sup> quitted form the MANTETSUKAISHA (満鉄会社), on November 19<sup>th</sup> of 1923, the Onoki-Yokoi-Aoki Co-operation Architecture (小野木横井市田共同建築事務所) was established by Onoki Kouji (小野木孝治), Yokoi Kensuke(横井謙介) and Ichida Kikujiro (市田菊治郎)<sup>49</sup>. This office was disbanded in January of 1930, one of the partner, Ichida, who was appointed as the Kacho (課長) of the MANTETSU KENCHIKUKA (満鉄建築課). Shortly after, in January of 1931, the Yokoi Architects (横井建築事務所) was reopened. The office had been operating until he death in 1942. Yokoi was elected as the president of the Manchuria Architects' Association (満洲建築士会) in July of 1932. In February of the next year, he was elected as the president of the Manchuria Architectural Institute, then in June was elected as a counselor of the institute. At 02: 30 on January 23<sup>rd</sup>, 1942, he died due to the onset of the gastric ulcer.

During the total 35 years when he began to work in the SMR.Co. in 1907 to his level in 1942, there is at least 8 school construction works which were designed by Yokoi Kensuke (横井謙介) in Manchuria region (include the Kwantung Leased Territory). The Dalian Yayoi Women's High-school (Figure 3-2) (大连弥生高等女学校, 1921)<sup>50</sup>, the Primary School of Onoda Cement Co. in Dalian Zhoushuizi (大連周水子小野田水泥附属小学校 1922?), the Fengtian Educational School program (奉天教育専門学校) Phase I ( 1924 )/ Phase II ( 1925 )/ Phase III ( 1926 ), the Dormitory of the Fengtian Educational School (奉天教育専門学校寄宿舍, 1926), the Dormitory of the Fengtian Middle School (奉天中学校寄宿舍, 1926), the Kaiyuan Primary School (開原小学校,1926), the Kyuiku Senmon Primary School (教育専門小学校, 1928), the Kyuiku Senmon Koudo (教育専門講堂, 1928) and the Antou kougakudo (安東公学堂, 1937) were recorded clearly in historical documents. All of these projects were designed by Yokoi' office after 1920. For the works he finished before 1920, there are not definitely records about them, including the research object of this dissertation: The Campus of South Manchuria Industrial School (南満洲工業学校) or was called the Nanyuan Campus.





**Figure 3-2 Dalian Yayoi Women 's High-school in 1921**

The brief biography of Yokoi kensuke as mentioned above, has been published in the Magazine of `満洲建築雑誌`, volume 22, issue 4, as commiserations. These commiserations<sup>51</sup> were written by Oka Oji (岡大路) and other familiars of Yokoi. Up to now, this is the only one official source that can find the recode about Yokoi Kensuke.

According to the other historical document<sup>52</sup> published by the SMR.Co., there is anther important works of Yokoi, the Houten Yamato Hotel (奉天ヤマトホテル) was recoded (Figure 3-3). This building, as an important architectural landscape of the Houten Great Square (奉天大広場), was located at the west of the square, and across from the campus of The Manchuria Medical College at the Fuji-machi street (富士町). The Onoki-Yokoi-Aoki Co-operation Architecture (小野木横井市田共同建築事務所) won the first prize of the design competition of The Yamato Hotel in 1924, and they has been entrusted for the continuously detailed design and appointed to charge this project. The building has 8872m<sup>2</sup> area, three floors with basement, used the Art Deco style shown as the façade decorated with white tiles and was constructed in April of 1929 by the Shimizu Group (清水組). It is considered as the most important works of Yokoi Kensuke (横井謙介).



**Figure 3-3 The Houten Yamato Hotel**

Definitely, Yokoi Kensuke 's design work is not limited in educational architecture, he had been completed various types of building in his career life. Generally, his work covered not only in the public facilities, for example, shrine, hospital, bank, hotel, office building, et.al, but also some special building like villa, factory, aircraft hangars and so on. Also for his works not only located in Dalian city, but also throughout the Manchuria region. His design ability was so strong and distinct, that's why he has been called as the right-hand man of his original leader Onoki Kouji (小野木孝治).

### **3.1.2 The Changing Planning Philosophy and Designing Style**

#### **a. Analysis on the design style of the Nanyuan campus and its buildings**

The Nanyuan campus, original campus of the South Manchuria Polytechnic/industrial School, was designed in the year of 1912 and constructed in September of 1914<sup>53</sup>. Based on the Nishizawa's study<sup>54</sup> on the design organization of the SMR. Co, this group was charged by Mr. Onoki. They were good at the 'Free-classicism'<sup>55</sup> and Neo-Renaissance architecture, which is an all-encompassing designation that covers many 19th century architectural revival styles which were neither Grecian nor Gothic but which instead drew inspiration from a wide range of classicizing Italian modes. In addition, the

building that designs by them used the red brick (赤煉瓦) as the frequently used construction material. Although, for each design works, they looked different, they have common characteristic: The red brick. Due to this, the brick's red changed to a common colorific characteristic of the Japanese constructed buildings in the Manchuria region. Nowadays, it is called '**the Japanese Colonial Architectural Style**'.

As one important work designed by them, the Nanyuan campus' buildings were used in the same architectural style: The Neo-Renaissance style with Gothic Revival characteristics. The red bricks and tiles and the white moldings were also found in the building. All the characteristics above were obviously, especially on the north façade, frontage faces to the Fushimi-machi, of the main building (Figure 3-4). The design method and technique of the Gothic cathedral's façade has been used to design the main entrance part where in the central of the building, for example, the portal with the pointed arch in the bottom, the lancets, or called lancet opening, instead of the rose window in the middle and the gable (pediment) at the top. Besides, there are two jutting stair halls which were designed in both sides of the entrance to imitate the tower of the Gothic cathedral (Figure 3-5). There have some buildings that were used the same design style in Dalian city at the same period, for example, the MANTETSU HONSHA BEKKAN (満鉄本社別館) was designed by the MANTETSU KOUMUKA(満鉄工務科) and was constructed in the year of 1913(Figure 3-6), the DAIREN KAIINSCHUKAIJYO (大連海員集会所) was designed by the Yokoi Architects (横井建築事務所) and constructed in the year of 1922 (Figure 3-7) and so on.



**Figure 3-4 The Central Part of the North Façade of the Main Building**



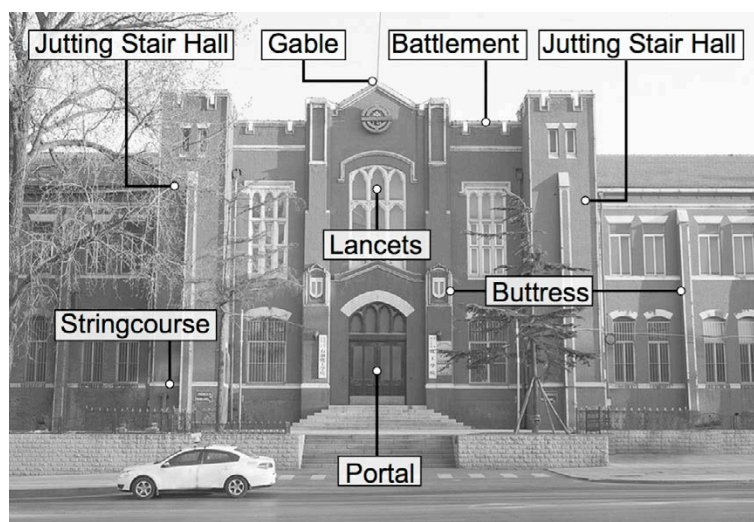


Figure 3-5 The Architectural Style Details

编 号: 116102  
 建筑物现在名称: 大连铁路卫生学校  
 原 有 名 称: 南满洲铁道本社别馆  
 建 筑 物 用 途: (现在) 学校 (原来) 办公  
 地 址: 中山区鲁迅路38号  
 结 构: 砖石  
 规 模: 地上2层 地下 层  
 设 计 年 月 日: 不详 竣 工 年 月 日: 1913年1月  
 设 计 单 位 · 人: 满铁工务课  
 施 工 单 位 · 人: 不详  
 出 处: 《满洲日日新闻》第1896号  
 备 注:

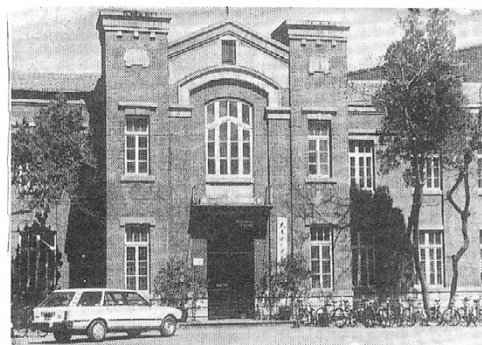


Figure 3-6 MANTETSU HONSHA BEKKAN

编 号: 116044  
 建筑物现在名称: 大连港务局招待所  
 原 有 名 称: 大连海务协会海员集会所  
 建 筑 物 用 途: (现在) 招待所 (原来) 俱乐部  
 地 址: 中山区丹东街1号  
 结 构: 砖石  
 规 模: 地上2层 地下 层  
 设 计 年 月 日: 1921年  
 竣 工 年 月 日: 1922年10月14日  
 设 计 单 位 · 人: 横井建筑事务所  
 施 工 单 位 · 人: 福昌公司工事部  
 出 处: 《满洲建筑协会杂志》第2卷第9号  
 备 注:

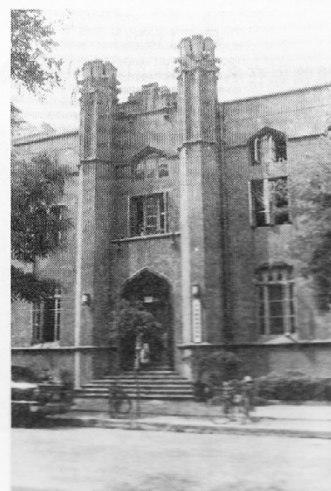


Figure 3-7 DAIREN KAIINSCHUKAIJYO

Its two side wings of the main façade of the Nanyuan campus' building were designed more simply than the main entrance part. The Lancets open was replaced by the square windows that with the brief brick beam. And only a series of rhythmic buttress as structure units were decorated on the façade. In addition, at the middle part of both the left and the right side wings, a brief gable was decorated on the roof to reveal the floor changes from two to one. They echoed with the one at the top of the entrance part too. Therefore, they also made the Nanyuan Campus building with the '3 parts in vertical and 5 parts in horizontal (横三段竖五段)' façade principal, which is an elegant pattern of the (French) Renaissance buildings.

Although, the Nanyuan campus building has so much characteristics of the Neo-renaissance, it isn't a real Neo-renaissance building. That's because several of details of the Neo-renaissance were omitted in this build, and other Japanese characteristics were added to the building. In addition, these buildings were mainly constructed in Japanese colony, hence, the kind of buildings are called '**the Japanese Colonial Architectural Style**' buildings. The characteristics are appeared obviously in the backside of the Nanyuan campus main building and other infrastructures. There, the decorative elements of the main façade were mostly simplified. A combination of red bricks, square windows and buttresses is a simple expression of the building. Even somewhere, the buttresses also were omitted, due to the building looks like a modernism one (Figure 3-8). Definitely, a few of Gothic elements were designed in several important parts of the backside to echo with the main facade. For example, the small rose windows were symbolic set in the gables of back façade (Figure 3-9). One thing we should to pay attention is these complex decorative elements only appeared on the building that was constructed in the beginning of the campus development. It means this simplified style was preserved in the constantly build-out progress in Nanyuan campus, while the rose window, the lancet opening and other complex elements never appeared again. In a certain sense, the simplification of Neo-renaissance lead to the red brick as the most prominent of the Nanyuan campus building. Actually, not only for the Nanyuan campus buildings, but also for the mostly Japanese colony's building the red brick was a common characteristic of them. About the building style evolution, this research will give a more detailed analysis in the next, the 3-3section.



**Figure 3-8 The Simplified Façade of the Build-out Building**

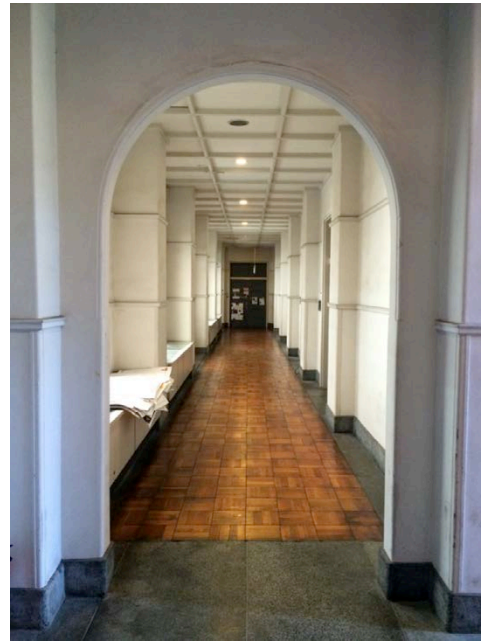


**Figure 3-9 The Rose Window in the Back Facade**

Another typical Japanese colonial characteristics were hidden on the inner corridors of the Nanyuan campus building, the partition wall (like a kind of gate-wall of hallway) with a semicircular arch, or called the Roma style arch (Figure 3-10). The semicircular arch that appeared in a Gothic Neo-renaissance style building is an impossible combination in the architecture common sense, except the eclecticism. Therefore, this research deemed the Nanyuan campus was not a typical Neo-renaissance building, but a Japanese colonial one. A common phenomenal is the semicircular arch that existed in lots of buildings that were constructed in the Japanese colonial period at Manchuria region, although these building exteriors were designed in totally different 'free-classical' styles. In addition, the designers of these buildings not only were the MANTETSU KENCHIKUKA (満鉄建築課), but also the KANTOSHU MINSEISHU SHOMUBU (関東州民生署庶務部, 後関東都督府土木課へ) that was led by Maeda Shouin (前田松韻). Even the latter designed much more than the former, at least, the semicircular arch was usually found in the preserved buildings, which was designed by the KANTOSHU MINSEISHU SHOMUBU. It looks that this design organization preferred to use the Rome style arch in their works. In the Japan mainland, this element also was found in historical buildings, for example in the 'Uchida Gothic style (内田ゴシック式)' historical building of the University of Tokyo (Figure 3-11).



**Figure 3-10 The Semicircular Arch in the Corridors**



**Figure 3-11 The Roma Style Arch in No.1 Engineering Building in UT**

This research suggests that these two factors may encourage the Japanese Colonial Architectural Style formed.

Firstly, the building materials choice influenced by the building codes that were published by the Japanese colonists in Dalian city and Manchuria region.

There was a strict restriction for building's preventing fires and artistry quality in 'the Dairen Kari Kisoku (大連仮規則)'<sup>56</sup> that published on April 1<sup>st</sup>, 1905 and 'the Sozatsu kaoku Toriharai no ken (粗雑家屋取払の件)'<sup>57</sup> that published on June 13<sup>rd</sup> and so on. In addition, not only the building codes, but other rules also have the some strict restrictions for the building. For example, In 'the kyouiku Seido (教育制度)', published by Kantochou (関東庁), one guidelines made it clear that due to the geographical location and climatic conditions were different from the Japan mainland, the school buildings and other facilities that located in Manchuria region must to consider the building structure cautiously and reasonably. Such as required the buildings must to use the brick or stone masonry structure. In particular, the steam heating system was forced to use for heat preservation design. It was also deemed a good design should give a perfect consider that whatever the bad and cold weather the outside is, it could ensured the indoor temperature was maintained at an appropriate level, so that the students can learn in a comfortable surrounding out of negative affected.

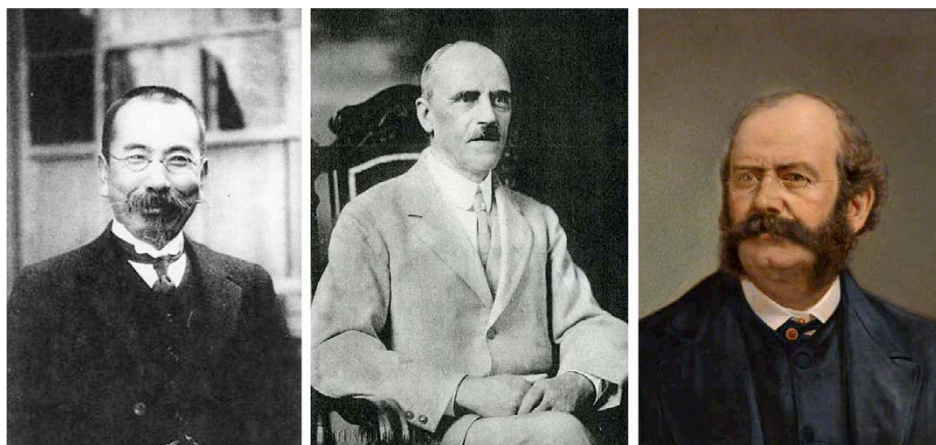


Depending on the differently condition of each schools, some special equipment and design method should be considered in the design if necessary. All in all, do not make any school in Manchuria region is inferior to the Japanese mainland one was the principal of 'the kyouiku Seido (教育制度)'<sup>58</sup>. Limited by these rules and regulations, the school building as an important infrastructure of city to choose the red brick as main building material was relative and reasonable decision. On the one hand, one reason is the red brick was easy to obtain in that period. The red brick production technology was in a high level in the Manchuria region, due to there is a long history of clay-made brick in China; On the other hand, the Construction cost is relatively low than other materials. Especially compared with stone masonry structure, the brick made one is much cheaper than it, not only for the cost of materials but also the cost and difficulty of artificial masonry. Thus, not only the schools, almost all public buildings<sup>59</sup> were used the red brick as the building material in Kwantung Leased Territory. Therefore, the red brick was become to an important feature of the Japanese Colonial Architectural Style buildings.

Secondly, the Japanese Colonial Architectural Style's formation has been affected by Tatsuno Kingo (辰野金吾) who was the Professor of the Tokyo Imperial University and president of the Japan Architectural Institute (日本造家学会).

Tatsuno Kingo (辰野金吾, 1854-1919), studied in Japan at the Imperial College of Engineering where he was one of the first to graduate in 1879 under British architect Josiah Conder<sup>60</sup>. After his graduation in 1879, Tatsuno journeyed to London in 1880 to attend London University. During his stay he worked at the office of the Gothic Revivalist William Burges<sup>61</sup>. Unfortunately, Burges died in 1881 during Tatsuno's stay. Before returning to Japan he travelled in France and Italy for a year. During this time he was influenced by the Queen Anne style. On his return to Tokyo, he taught first at the Imperial College of Engineering before becoming department head at the Tokyo Imperial University. In 1886, he<sup>62</sup> was one of the founders of the forerunner of the Architectural Institute of Japan, the then called 'Building Institute' (Figure 3-12).





**Figure 3-12 Tatsuno Kingo, Josiah Conder, William Burges**

Based on the Queen Anne style, he Tatsuno Kingo (辰野金吾) created his own architectural style – the Tatsuno style. The red brick and gray-white marble (or other material) as the main constructional and decorative elements were used, shown as an imitated western building shapes but with Japanese artistic conception style (Figure 3-13)<sup>63</sup>. Because Tatsuno's enjoyed high virtue and commanded universal respect in the Japanese construction industry, and he has so many students who are also influential people, this research has to consider his impact on Manchuria Region and other Japanese colonies. Most of the early period graduates of the in the Architectural discipline (造家学科) of the Tokyo Imperial University were obeyed his command to work all over the country<sup>64</sup>. Definitely, among them, the 4 architects of the MANTETSU KOUMUKA(満鉄工務科) were included. Onoki (小野木), Yokoi (横井) and others were directly or indirectly taught and affected by Tatsuno. Under the teacher-student relationship's influence, it cloud be self-evident that how affect on these architects' design style formation were. If we deemed the red brick was chosen as the construction material due to the building codes, could we deemed the appearance of the gray-white string course and windowsill of the Nanyuan campus buildings were influenced by the Tatsuno style? This research suggested that this possibility is possible. The same design method also be used in the building of the Dalian Minseisho(大連民政署) that was constructed in March of 1908 (Figure 3-14). The designer is Maeda Shouin (前田松韻) who was the 24<sup>th</sup> period graduate of the Architectural discipline (造家学科) of the Tokyo Imperial University. Therefore, this research suggests that this phenomenon was not a coincidence.



**Figure 3-13 Taiwan Sōtokufu**



**Figure 3-14 The Dalian Minseisho**

#### **b. Analysis the Evolution of the Design Ideology of the Nanyuan Campus**

Through the review of the history of the Nanyuan campus from the year of 1914 when the campus was constructed to the year of 1945 when the South Manchuria Industrial School was closed, during this 30 years, the continuous campus build-out and renew progress is easy to find. One obviously point is the building style of the buildings that were finished before 1945 were kept in uniform, although they were build in different periods. It means in the first 30 years of the Nanyuan campus' evolution, it maintained the same design ideology to guide the campus construction. But who can charge the design ideology for the campus construction during the 30 years? This is a big doubt for this research.

This research suggests that Oka Oji (岡大路) is the key person for the Nanyuan Campus. There is a historical record written by him in the South Manchuria Industrial School history document:

*‘……The new campus of the South Manchuria Polytechnic School was located in the Fushimi-dai zone of Dalian, it was started to construct in November, 1912 and was constructed in March, 1914. Therefore, the school could move into the imposing new campus that located at the top of the small Fushimi hill from the temporary campus. Moreover, the Mining Engineering discipline (採鉱課) moved into the Fushun campus due to it need the Fushun Coal Mine (撫順炭坑) as the practice base. The author (Oka) worked into the SMR.Co. in 1912. The memories about the situation of that period already become dimmed, but fortunately there are a few single memories remained. First, although I was still so young when I worked in the company, I was appointed as one of Sekkeikantoku (設計監督) of the New campus construction project. Second, around the year of 1914, I have been worked as a lecturer to teach the students belonging to the Architecture discipline for one year<sup>65</sup>. ……’*

*‘……As the Dean of the South Manchuria Industrial School, I am glad that I can join in the campus construction work as a dean with professional architecture background in this good economy-social situation. For the projects of the campus infrastructures’ repair, renew, renovation and build-out I do my best to hand-on management no matter what period it is in. Up to now, I have charged and designed all the construction works of this campus. Overall, fortunately, there is no serious disadvantage in here<sup>66</sup>. ……’*

Oka Oji (岡大路, 1889–1962), the 32<sup>nd</sup> period graduate of the Architectural discipline (造家学科) of the Tokyo Imperial University in 1912. Then was working in the SMR.Co. Then, in April of 1923, he was appointed as the Kachou (課長) of the MANTETSU HONSHA KENCHIKUKA (満鉄本社建築課). In February 1925, he transferred to the South Manchuria industrial School as a Professor of the Architecture discipline (建築工学科), on April 30<sup>th</sup> of 1934, he was appointed as the third Dean of the School and worked until he demission on June 14<sup>th</sup> of 1941. In the year of 1942, he was appointed as the Kyokuchou (局長) of the construction bureau of the Manchukuo (満洲国建設局). After the WW II, he returned to Japan in 1953, and then died in 1962 in japan<sup>67</sup>. Through his description of his handwriting and his biodate, we could easily found the deep relationship between him and the Nanyuan Campus. Therefore, this research deemed he gave a positive influence on the Nanyuan campus’ construction work before 1945. Especially for the second and third build-out periods when after the year of 1937, he played an important role to maintain the campus design ideology and the building style.

## 3.2 Analysis the Transition Progress of Campus Site Plan

### 3.2.1 Campus Site Choice and Campus change

As the mentioned in the chapter 2, the South Manchuria Polytechnic School 採鉍科 borrowed an existing building located in the Kodama-machi (児玉町) as the temporary campus for the first students to enroll. Then the permanent campus was constructed in September of 1914, Fushimi-machi (伏見町) of Dalian city. In this year the main building was constructed in this 41,000m<sup>2</sup> campus site, the building area was about 3600 with two floors. At the same time the Cafeteria building was constructed too, which was linked with the main building. The required equipment and mechanical were in placed gradually. Except the students belonged to the Mining Engineering discipline (採鉍科), all the student were housed in the existing buildings which belonged to the MANTETUKAISHA (満鉄会社) around the Campus in Fushimi-dai (伏見台)<sup>68</sup> (Figure 3-15). With the time pass by, there were other land was given to the school for its affiliated schools and the dormitories, however, in this research will not do further analysis about them.

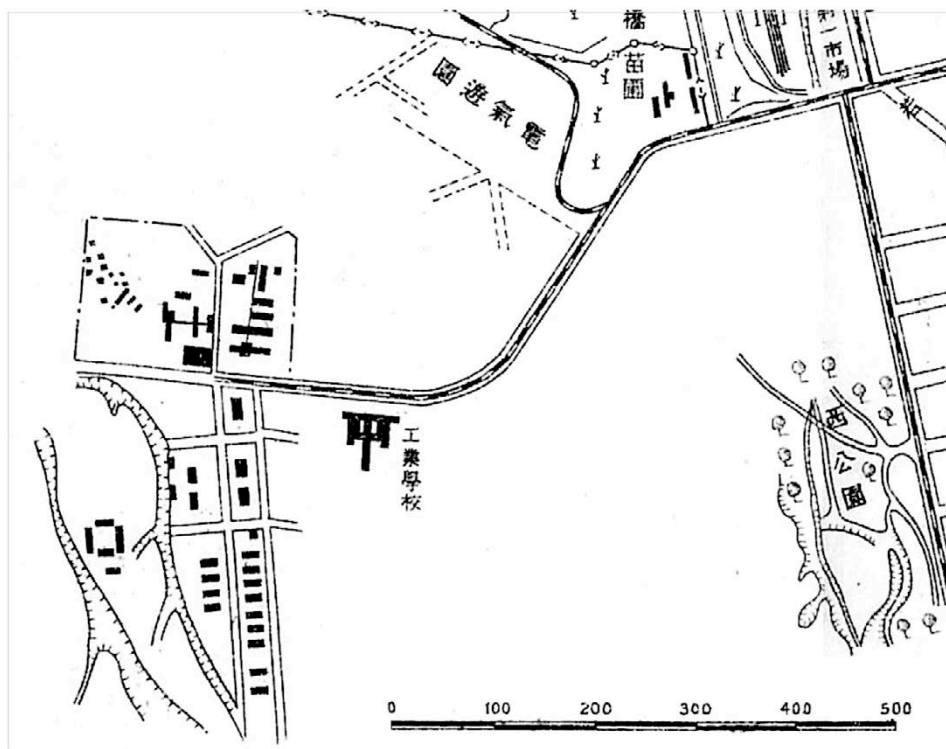


Figure 3-15 The Fushimi-dai Zone In 1915

For transition progress of the campus site, this research can confirmed that the site area was shrunk to 36,600m<sup>2</sup> in the period of 1931-1935. This inference

was based on the historical campus site plans in 1921 and 1937, the Dalian maps before 1945, especially the maps between 1930 to 1940, and other historical documents. The shrink was because a new urban road was constructed through the northeast corner of the campus, thus a little part of the campus was cut off. In addition, based on the topographic map of the campus area in 2000s and other historical records, the campus site details was retraced by this research, the dimension also is annotated. Because the campus was designed by Japanese units of measurement- Shaku (尺)<sup>69</sup>, there is some non-integer (decimals) after they were transformed to the International System of Units (SI). Due to this, these dimensions were rounded by the research for convenience. (Figure 3-16). In the year of 1914, the length of the site along the Fushimi-Machi Side was about 295 meter and the backside was about 115 meter. The campus shape was like a trapezoid but an inset-pentagon. After the shrinking in 1930s, the length of the site along the Fushimi-Machi Side was about 235 meter. The shape is pentagon. Since then, the outline of the Nanyuan campus was no changed anymore.



**Figure 3-16 The Scale of The Nanyuan Campus**

### 3.2.2 Study on the Planning Index

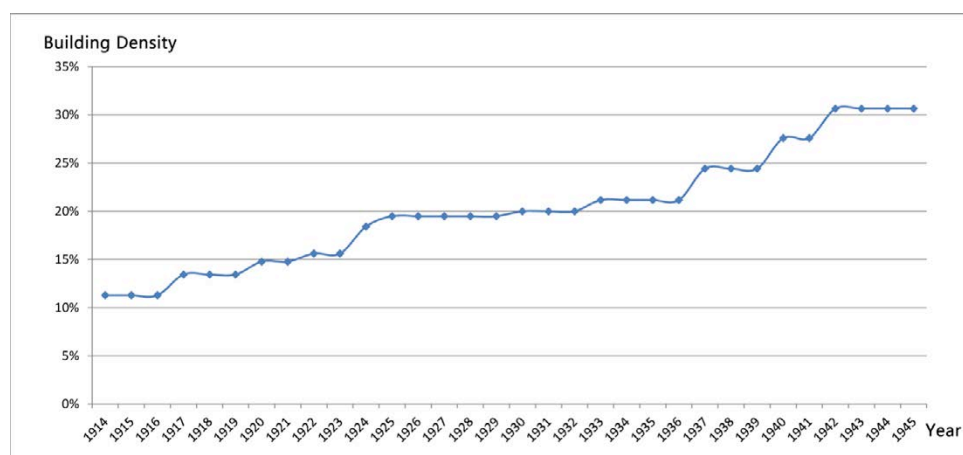
According the records on the history documents of the Nanyuan Campus and

the topographic map in different years<sup>70</sup>, the site area, building density and other indexes are restored by this research, recorded as follows (Table 3-2):

**Table 3-2 Index of Nanyuan Campus Before 1945**

Date(年)	m <sup>2</sup> (敷地面積)	m <sup>2</sup> (建坪)	% (建坪率)	(備考)
1914	About 41000	4624. 80	11. 28	
1917		5502. 20	13. 42	
1920		6051. 60	14. 76	
1922		6396. 00	15. 60	
1925		7982. 70	19. 47	
1930		8195. 90	19. 99	
1933		8671. 50	21. 15	
1937	About 36600	8934. 06	24. 41	
1940		10090.62	27. 57	
1942		11206.92	30. 62	
.....		.....	.....	

Based on the indexes mentioned above, the building density curve before the year of 1945 was drawn as follow (Figure 3-17).



**Figure 3-17 Build Density Curve of Nanyuan Campus before 1945**

Before the school upgrade, from 1914 to 1922, it is easy to see that the construction progress in a relative slow speed. In this period, the campus construction work was to mainly and basically complete the original campus planning content that designed by Yokoi and his design group. Contrast analysis, after the school was upgraded in the year of 1922, and a sharp increase was shown in the curve. It means that there was a grand infrastructure that had been constructed continuously. Therefore the campus building density was increased



step by step, and largely exceeds the required of the building codes, like the Daren kitei (大連規定) and the Mantetsu Kitei(滿鉄規定). Until the year of 1942, there were 11,200 m<sup>2</sup> land which was used to buildings' construction (建築面積), nearly 3 times as that in the initial period. This is mainly because the heavy requires of the specialized laboratories, internship factories and other professional classrooms' construction can meet the requirements for student teaching and training. Therefore, in the curve it shown a significantly increase. The description and analysis of the details will be given in the next section.

### **3.2.3 Open-space in the Campus and their Features**

The open-space in the Nanyuan campus mainly was the green space around the buildings and the playground in the south of the campus. Due to the limitation of the Campus area, the scale of these open-spaces was relatively small. Among them, the important two are the playground that is the biggest one in the campus and the greenbelt in front of the Main building that faced to the Fushimi-machi, which is the Main entrance open space of the school.

The main entrance open space as a linear green space is a kind of transition space between the campus and Dalian city. Limited by the North façade of the Main building, this space has a semi-open characteristic. With the elevation difference between the campus and Fushimi-road, there is a distinctive boundary of this greenbelt. Inner of it, not only some paths and small squares, but also stratified and extensive plants were designed in it. By this greenbelt, the urban transportation space is softly transformed to the campus entrance space. Until nowadays, this space is still preserved. Moreover it became to an obviously feature of the Nanyuan heritage (Figure 3-18).

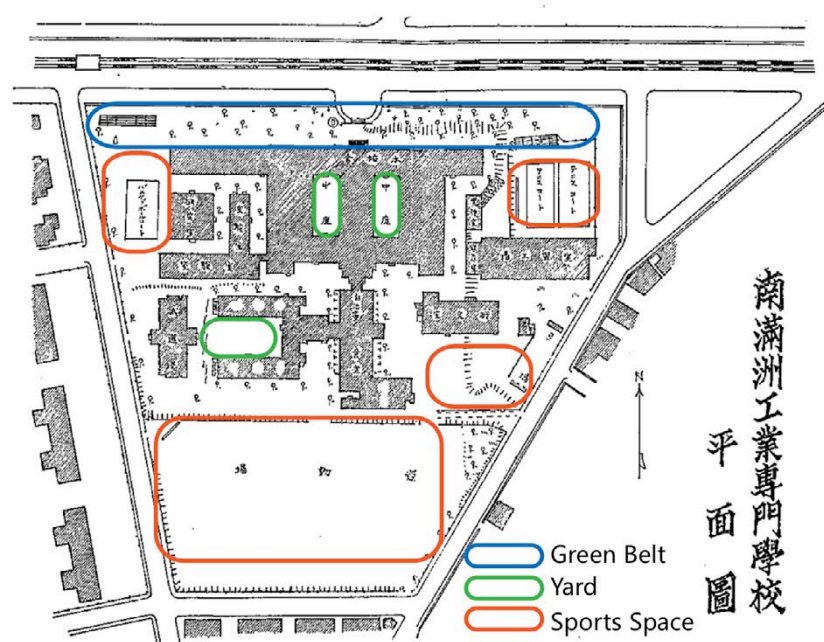


**Figure 3-18 The Green Belt in front of The Main Building**

The playground was mainly used as the baseball field, which low fences were set around it. The average length was about 120 meters and the width was 60 meters. Around it there was also tall trees were grown, all of the elements made the playground shown as a full open space.

In the initial period of the Nanyuan campus, there were two small sports spaces which were established in the both side of the main building. The east one had a small garden and one tennis court that was located based on the elevation change. The west one has a basketball court, some table tennis courts and other sports facilities that were located in the narrow land. With the gradually campus build-out, the small garden in the east was transformed to another tennis court which remained until 1945 and the west one was removed and renewed for other functions.

The brief illustration of the open space in the Nanyuan campus is shown as follow (Figure 3-19).



**Figure 3-19 The Open Space of Nanyuan In 1937**

### 3.2.4 Summary

The Nanyuan campus as a higher educational campus its scale is relatively small, therefore the high building density was appeared in it. It is an obviously feature of the Nanyuan campus. Why is the campus so small? Maybe the reason has some relationship with the orientation and size of the South Manchuria Polytechnic School that is the first user of the Nanyuan Campus. As mentioned in the Chapter 2, this school was a middle level educational institute, which was



used to train the engineers for the Manchuria Railway Company. And the enrollment was only 320 students. Therefore the Scale of the campus site was appropriate for the initial period. Whereas after the school upgrade to a higher educational one, with the school's orientation improves the enrollment soon increased to nearly 2 times than beginning, meanwhile the request for the campus infrastructures increased too. All in all, the upgrade made the scale of the campus changed to inappropriate for the South Manchuria industrial School gradually. But around the campus there was no providing land can be used to enlarge the campus at that time, it is also specialized why this school needs to borrow and use the equipment and facilities throughout the SMR.Co. For example, the Fushun Coal Mine (撫順炭坑) was used as the practice base for the students belonged to the Mine Engineering Discipline more than 30 years; except to use the school's laboratory and practice facility, the various equipment of the Shahekou Locomotive works (大連沙河口滿鐵工場) were usually used by the Students belonged to the Mechanical Engineering discipline; Also, for the Applied Chemistry discipline, its experiment was usually done in the SMR.Co. Central Research Center (滿鐵中央試驗所) that located in opposite of the campus; in addition, many of the existing buildings belonged to the SMR.Co. had been used as the dormitories of the school. And so on.

In general, although the campus's scale and function couldn't satisfied the requirement of the school, but the deficiency and weakness could be adjusted and completed by invoke the strength, like infrastructures, of other institutions, Because it's owner was the enormously powerful and state-backed company: the South Manchuria Railway company. As the Important Industrial School of the company, it obtained a great support from the SMR.Co. To put it simply, it also could easily be found in the choice of each dean of this school.

### **3.3 Analysis the Transition Progress of Buildings Located in the Campus**

#### **3.3.1 Build-out and Demolition of Buildings**

During the period from 1912 to 1945, the Construction works was continuous no stop. The construction area was increased exponentially. Except the New constructed buildings, some old ones had been renewed in 1930s. The evolutionary details are shown as the Table 3-3<sup>71</sup>.

**Table 3-3 The Evolution Details of the Nanyuan Campus before 1945**

年	名前	建坪 m <sup>2</sup>	注(新/旧)
1911-03-16	南満州工業学校 設立	――	中央試験所と 沙河口工場
1912-02-26	仮校舎（満鉄本社内）	――	大連児玉町
1912-11-01	本館と食堂等	約 4624. 80	起工
1914-03-08			大部分竣工
1914-09			落成
1917-12	寄宿舎新築	約 877. 96	竣工
1918-05-01	附属職業教育部	――	借りる建物
1920-04	本館増築工事教室二個(右下两教室)	約 288. 43	竣工
1920-12	炊事場新築並食堂拡張工事	約 262. 46	竣工
1922-02-18	南満州工業専門学校 設立	――	
1922-12	建設材料実験室	約 341. 55	竣工
1924-08	機械実験室及製図室	約 1146. 70	竣工
1925-12	児玉町所在満鉄道場を本校に移転	約 441. 92	竣工
1926-03-31	南満州工業学校廃止	――	
1930-11	電気高压実験室	約 214. 50	竣工
1933-11	機械実習工場	約 475. 35	竣工
1936-04-01	附属職業教育部を附設工業実務学校と改称する	――	
1937-09-21	臨時技術員養成所 附設	――	
1937-11	電気実験室	約 259. 68	竣工
1938-04-01	別館寄宿舎➡職員室と電気実験室	――	改造起工
	食堂➡生徒控室	――	改造起工
	炊事場➡銃器室	約 33. 28	改造起工
	寄宿舎が松山町所在満鉄独身寮に	――	移転
1938-09	旧寄宿舎改築工事竣工	――	改造竣工
1939-04-01	附設工業実務学校➡鉄道工務員養成所	――	改称
	鉄道工務員養成所が大連鉄道学院所管	――	移管
1940	西側庭球コート➡建築、農土、土木、鉱山の製図室（二階建）	約 715. 51	竣工
1940	武道場の半分➡電気写真室と電気実験室（二階建）	約+ 255. 28 約- 117. 78	竣工
1940	応化実験室（二階建）	約 274.62	竣工
1941	機械の製図室、水力実験室、自動車修理室、鋳物工場等（三階建）	約 1115.11	竣工（予定 1941）
1942	新しい武道場	――	未建

For the construction works in the Nanyuan Campus before 1945, or is called the evolution of the Nanyuan Campus, it can be classified as three distinct

phases.

The first phase is 1912~1922 when the campus gradually completed the initial campus planning. In this period, the campus construction specially emphasis on the Bekkan (別館) building group, for example, the dormitory building.

The second phase is 1922~1936 when after the school upgraded to a higher educational institution. In this period, to meet with the require due to the upgrade, the campus construction mainly emphasis on the Honkan (本館), or was called main building. Several of laboratories and other facilities had been established during this period.

The third phase is 1936 to 1945 when the school expanded enrollment and after revised its school constitution<sup>72</sup>. The great changed of the campus asked the campus infrastructures to meet the functional requires, hence, it led to massive renovation and build-out works was completed. The biggest construction work in this period was the reconstruct work of the Bekkan (別館) building group in the year of 1937, from the cafeteria and students' dormitory to the office room, laboratories and other facilities (Figure 3-20). There is a record that wrought by Oka Oji:

*‘……Firstly, the engine room of the electrical laboratory has to considered. It ran all days in the center of the Main building, led to the annoying noise was produced. Also, the original library that was located on the second floor of the Northwest corner of the main building has become increasingly narrow with the school development. Therefore, a new electrical laboratory with its engine room was decided to build out of the main building, on the south side of the cement laboratory. Then, the rooms of the original electrical laboratory were renewed as the library; Secondly, start from 1937, the boiler steam room and its heating pipes system under the floor has to considered, too. It has been used for nearly 25 years, lack of heating capacity, the corrosion of the iron pipe and other risk problems were exposed. Therefore, the heating system redesign work has to do in time. By this opportunity, a new boiler steam room was designed under the cafeteria of the Bekkan (別館). The Main-heating pipe was laid along the central corridor of the main building and under the floor, the sub pipes as the east and west branches were evenly shunted from the main-heating pipe. This heating system like a tree form is a kind of ideal plan. The last but not the least, the reconstruction of the Bekkan (別館) in 1938. The self-management dormitory that direct connect with the Main building was too convenient for the student, which has reached a level of more disadvantages than advantages. To eliminate the disadvantages, make sure*

the sanitary conditions and enlarger the teaching area are the 3 purposes for this reconstruction work. To achieve this aim, a kill 3 birds with 1 stone's method is move the dormitory to the Matsuyama-tai (松山台) Zone where near the campus but out of it, then reused the building as the staff rooms for each disciplines and a part of electrical laboratory. In addition, the original cafeteria was reused as the student activity room (学生控室) and the kitchen was reused as the firearms room .....

.....Although the school campus is narrow, but to use the Playground as construction land is definitely avoided thing for the school development. Based on this Plan ideology, it looks the construction work for the school development only can build in the north side of the campus with an intensive style, due to there is no space land around the campus can be used for the campus site expansion<sup>73</sup>.....'

According to his record, it can be easily found that he (and the design group) made a great effort to make a positive and nice plan for the campus evolution. Because we know that how to add the new functional buildings in the north side limited area and does not destroy the original design and planning style is a quite difficult problem. As he said, he has been charged and designed the campus construction work always by himself, at least to the time when he wrote the record, there was not so much regret was left in the campus.

The retraced campus site plans year by year that illustrated the campus evolution progress before 1945 are shown as the Figure 3-21.

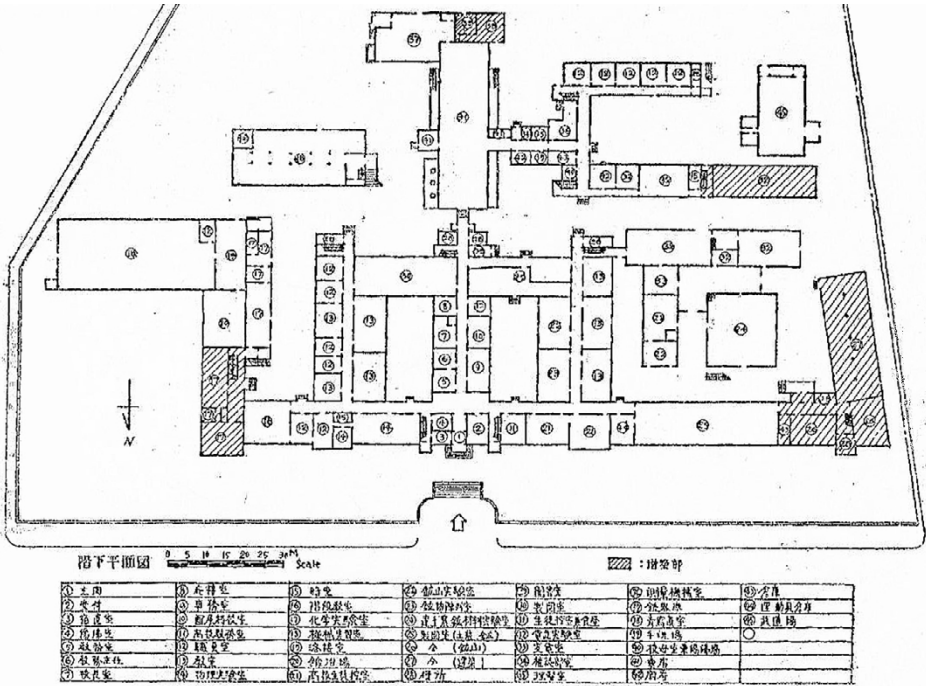
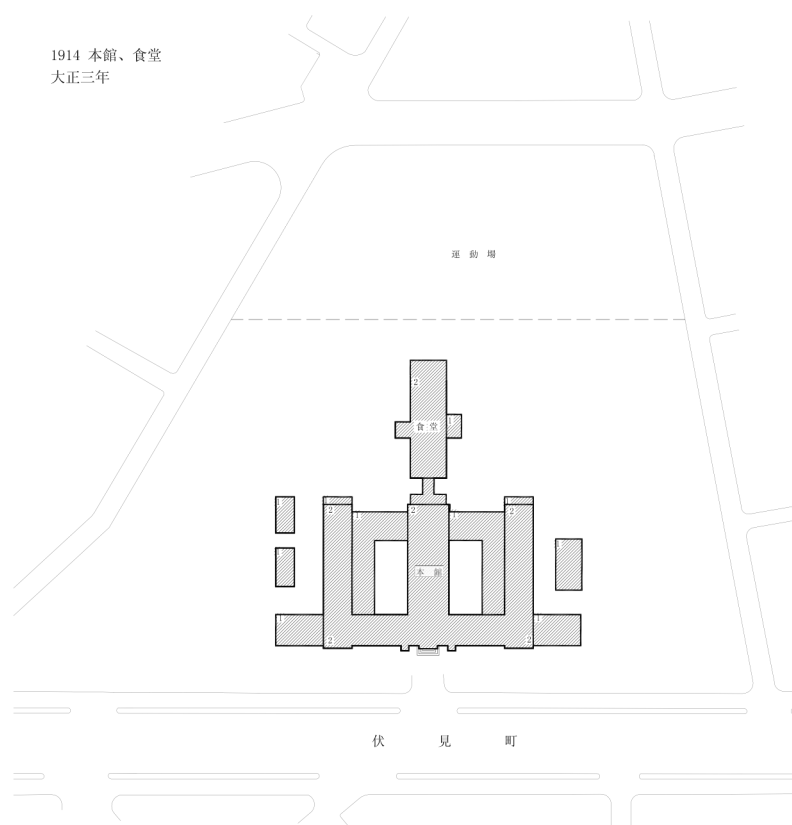
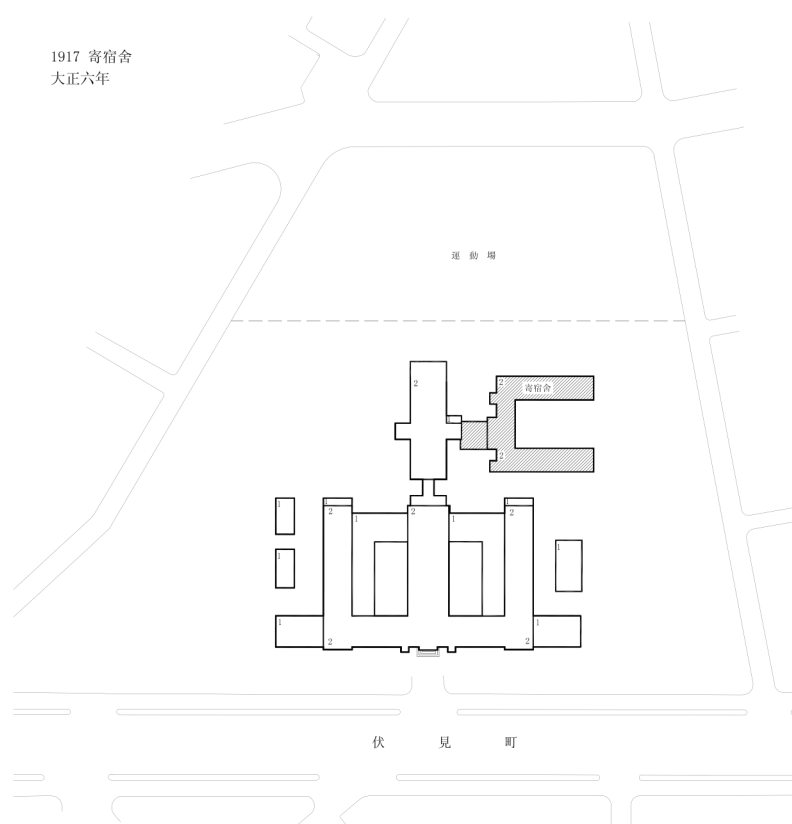


Figure 3-20 The Floor Plan of Nanyuan Campus Building



引用：  
大連附屬地平面圖  
南滿洲工業學校創立十年誌  
附圖  
1921年  
南滿洲工業學校創立三十  
附圖  
1942年

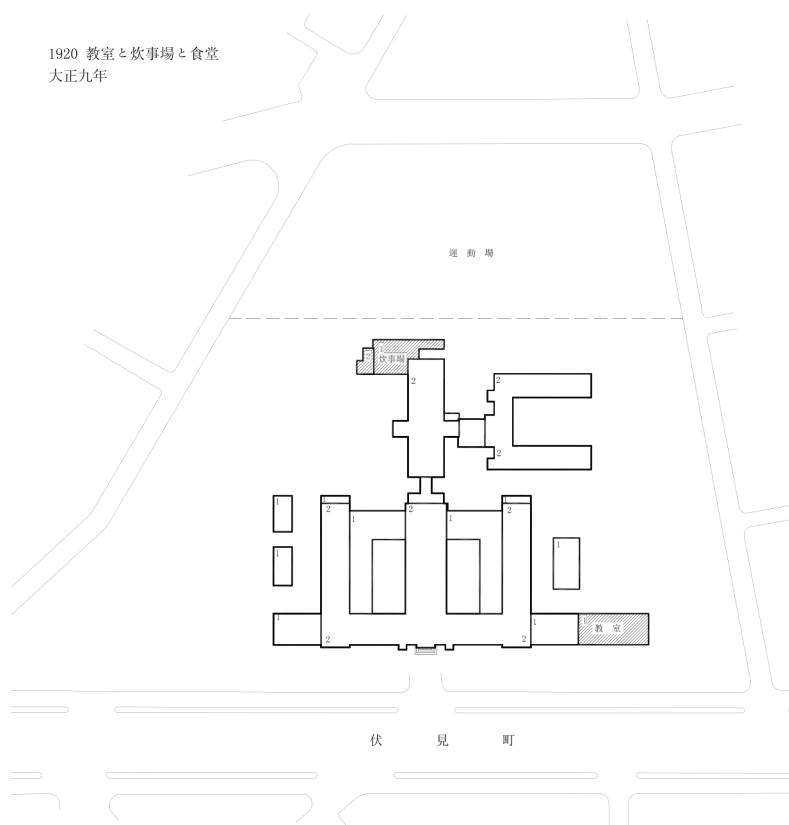
SCALE 1:2500



引用：  
南滿洲工業學校創立十年誌  
附圖  
1921年  
南滿洲工業學校創立三十  
附圖  
1942年

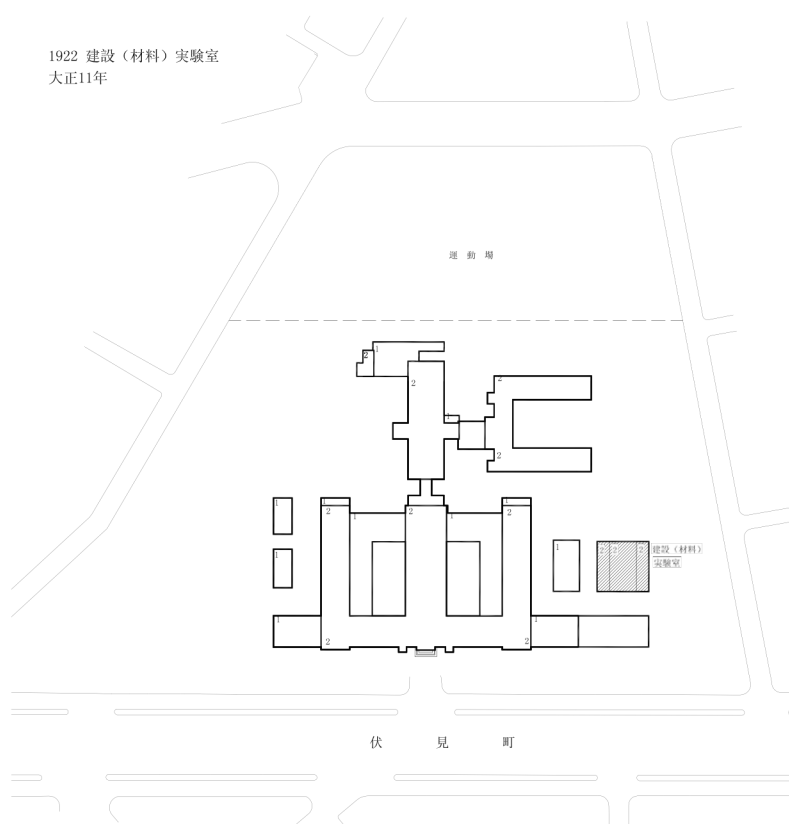
SCALE 1:2500

**Figure 3-21-1 The Retraced Site Plans of Nanyuan Campus Before 1945**



SCALE 1:2500

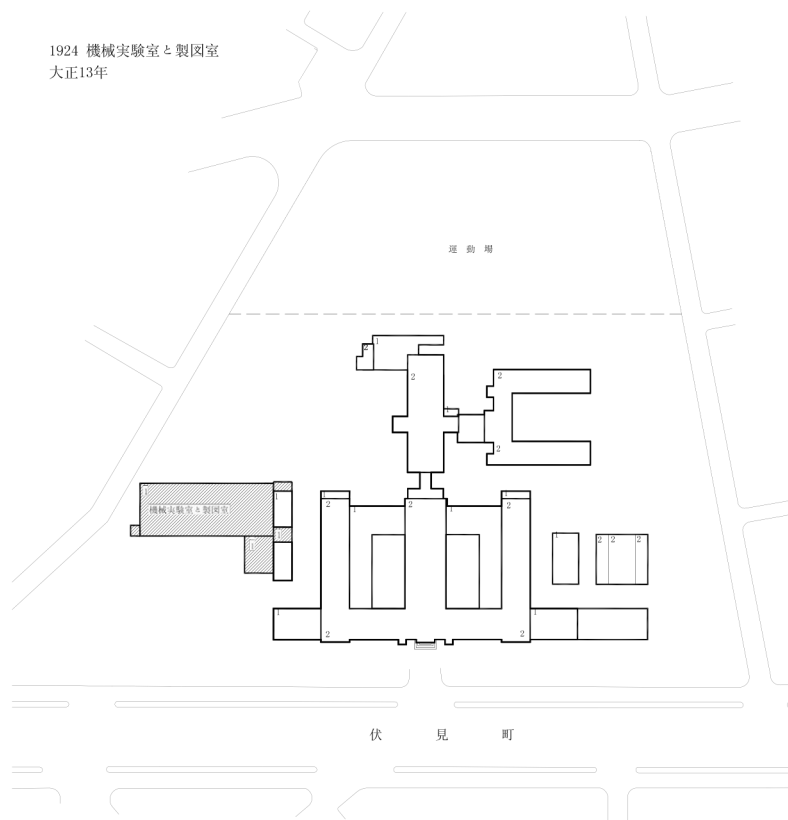
引用：  
南満洲工業学校創立三十年誌  
附図 1942年



SCALE 1:2500

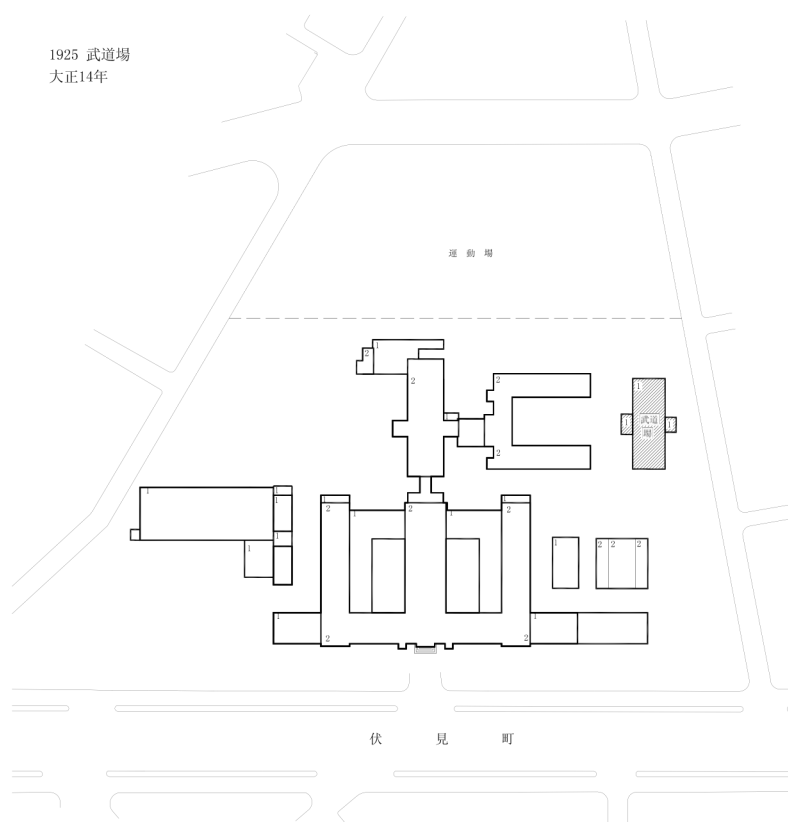
引用：  
南満洲工業学校創立三十年誌  
附図 1942年

**Figure 3-21-2 The Retraced Site Plans of Nanyuan Campus Before 1945**



引用：  
南滿洲工業學校創立三十年誌  
附圖  
1942年

SCALE 1:2500

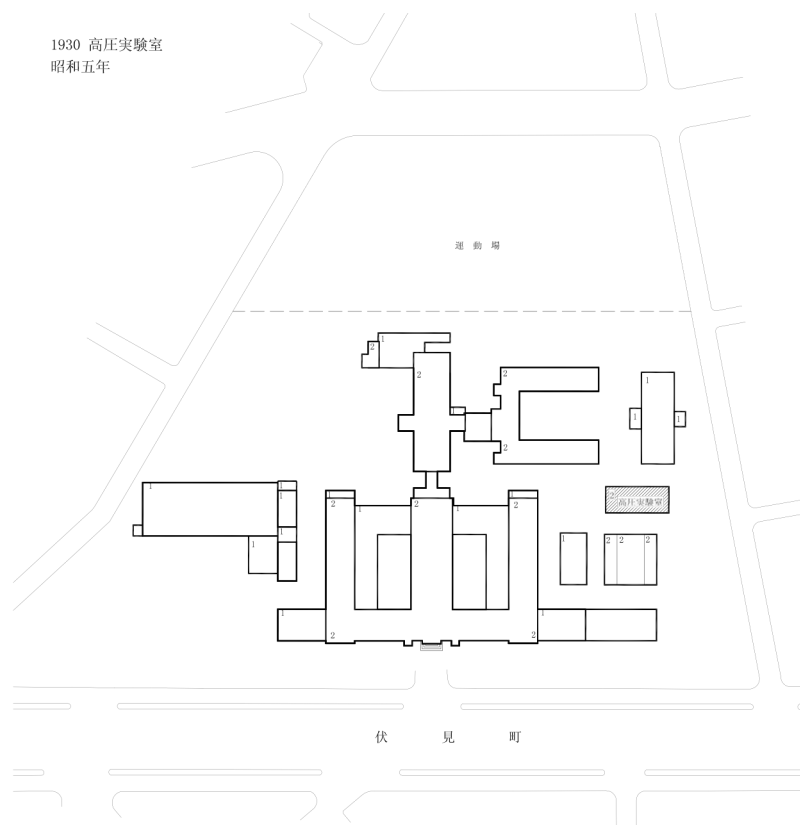


引用：  
南滿洲工業學校創立三十年誌  
附圖  
1942年

SCALE 1:2500

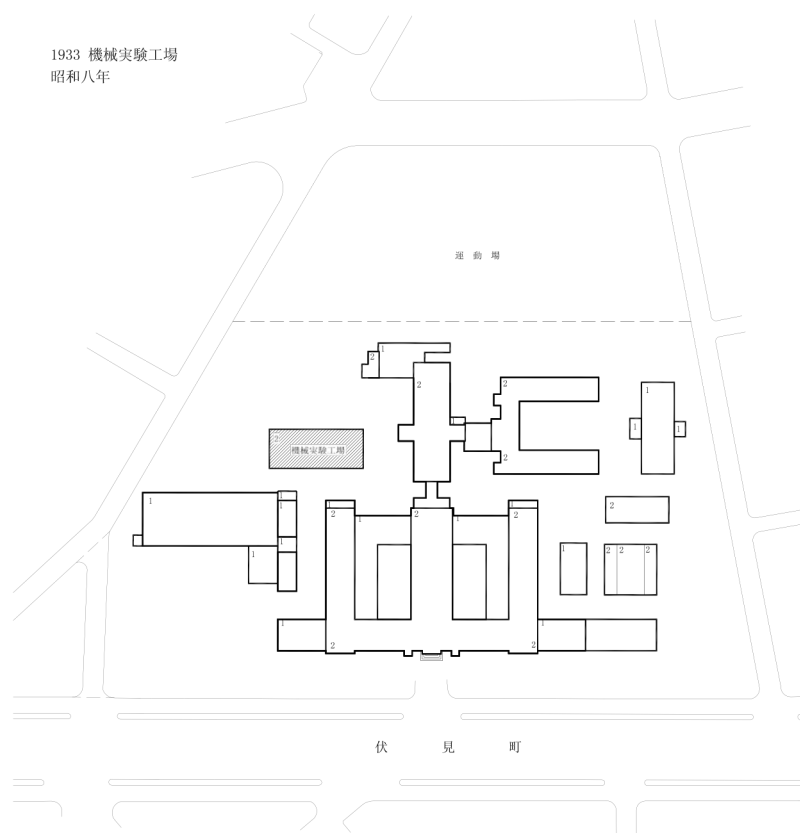
**Figure 3-21-3 The Retraced Site Plans of Nanyuan Campus Before 1945**





引用：  
南満洲工業学校創立三十年誌  
附図  
1942年

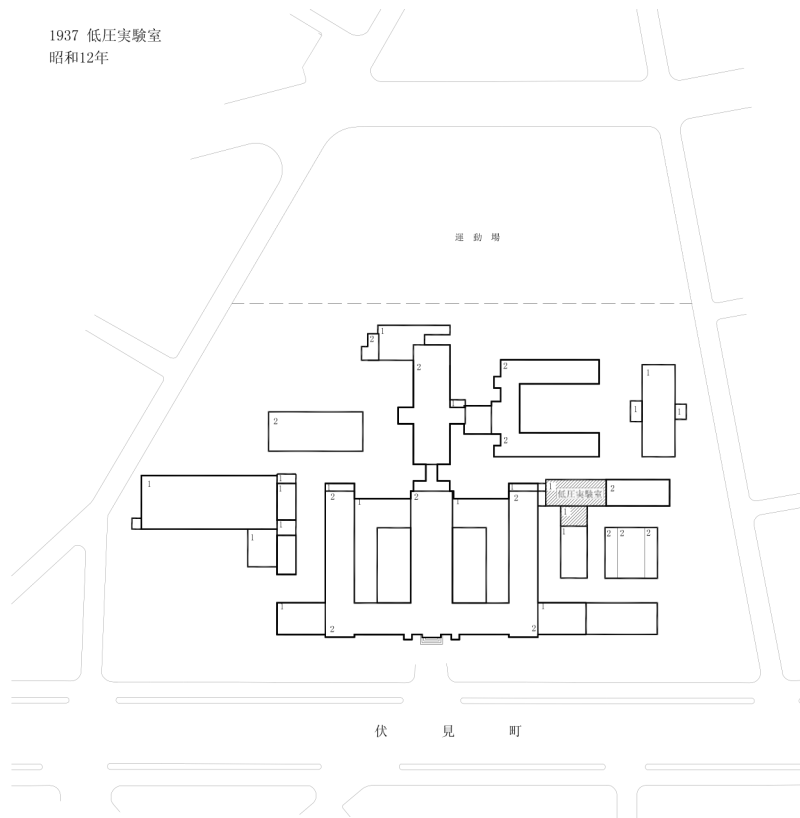
SCALE 1:2500



引用：  
南満洲工業学校創立三十年誌  
附図  
1942年

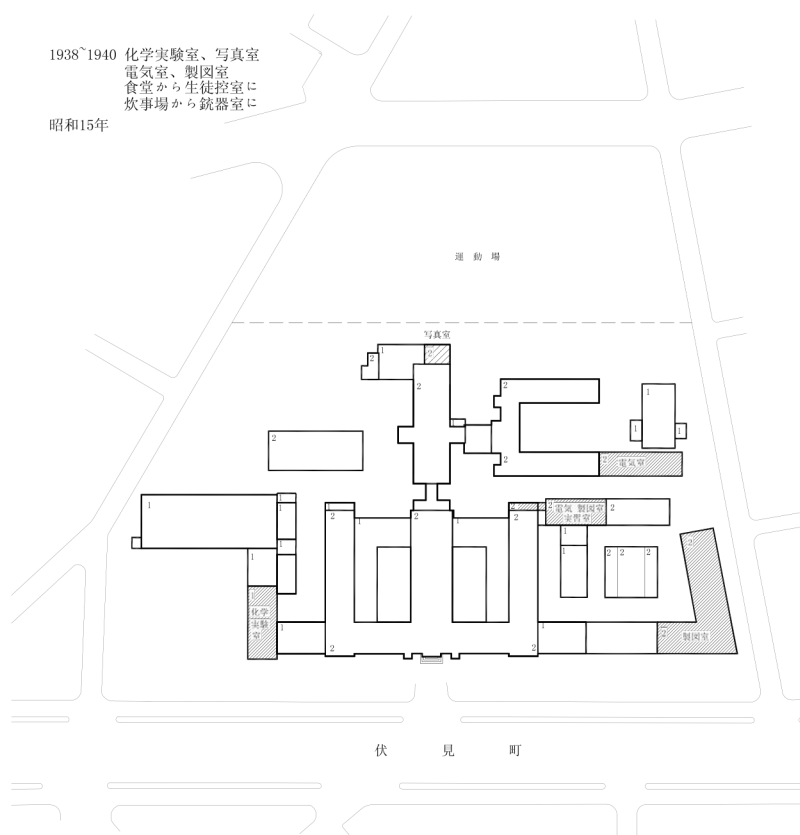
SCALE 1:2500

**Figure 3-21-4 The Retraced Site Plans of Nanyuan Campus Before 1945**



引用：  
南満洲工業学校創立三十年誌  
附図  
1942年

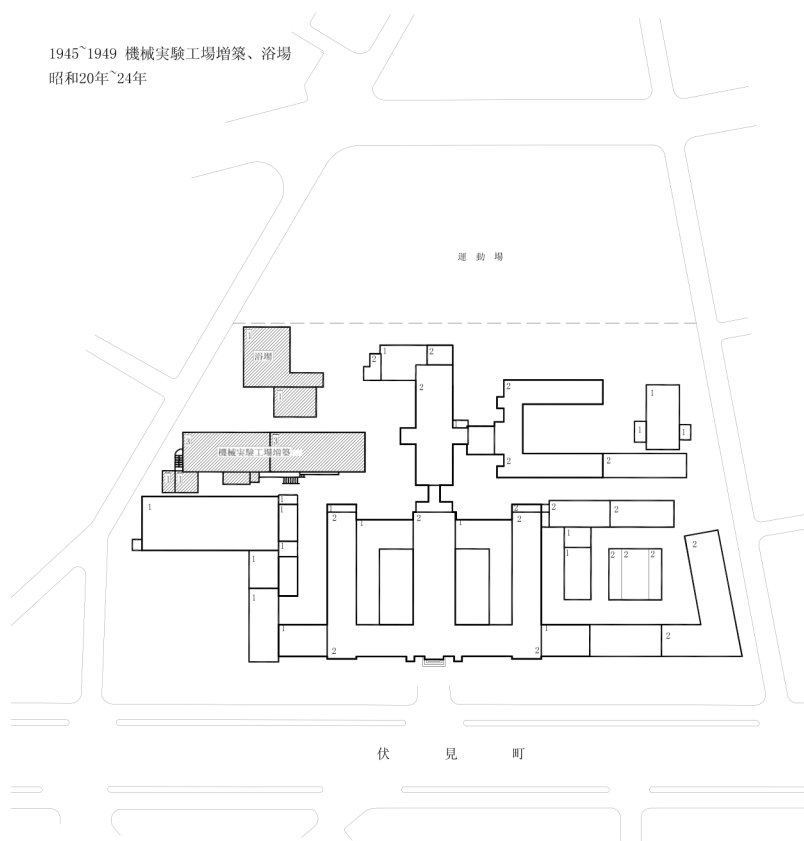
SCALE 1:2500



引用：  
南満洲工業学校創立三十年誌  
附図  
1942年

SCALE 1:2500

**Figure 3-21-5 The Retraced Site Plans of Nanyuan Campus Before 1945**



SCALE 1:2500

**Figure 3-21-6 The Retraced Site Plans of Nanyuan Campus Before 1945**

### 3.3.2 Definition the Architectural Character Based its Transition

As mentioned above, the building (campus) design style was remained in uniform in its evolution progress, the three phases, before 1945. However, for each phase, there are specific characteristics of each period.

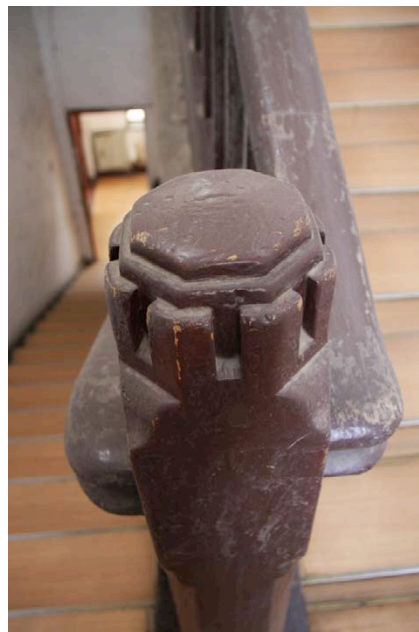
For the buildings that completed in the first phase (1914-1922), they were designed in the most exquisite design method with lots of ornaments and special structure details (Figure 3-22). Compared with another two periods' ones, the architectural form in this period appeared more complex. The external morphology features include:

- a. The lancet arch windows, or are called the lancet opening usually, in the front and side façades of main building
- b. The rose windows in the gables of back façade of main building.
- c. The battlements, or are called the crenellation on the top of facades<sup>74</sup>
- d. The briefly buttresses
- e. The continuous stringcourses on the bottom of facades
- f. The slender square windows with flat or arch block lintel
- g. The overhanging type verge decorated with the wooden truss
- h. The double-pitch roof

The **feature c, g, and f** were appeared in the inner of the buildings. For example, the style of railing acorn (cap) of the banister in each stare is echo with the **feature c**, like a tower with battlements (Figure 3-23). The roof truss of the lecture room where on the second floor of the main building is same type



**Figure 3-22 the Façade of the Building constructed before 1922**



**Figure 3-23 Detail of the Banister Nanyuan In 1937**

truss with the **feature g** (Figure 3-24). In addition, the partition wall with a semicircular arch that decorated the ceiling of corridors can also be seen echoed with the **feature f**. As the mentioned above, the research suggested and inferred that in the beginning of the campus design, a requirement for keep the uniform both inside and outside had been asked.



**Figure 3-24 The Wooden Truss of The Auditorium**

In addition, as a kind of summary, the **feature a and b** are important and typical characteristics of this period, distinctive with other two periods, but they only were used in a few of areas. The **feature d, f and h** were the common architectural characteristics and were used in whole of campus. Even they are the common architectural characteristics that were through the three phases before 1945.

For the buildings that completed in the second phase (1922-1936), the architectural form in relatively concision then the ones in first phase, but there also many features had been inherited, shown as:

**Feature c.** The battlements, or are called the crenellation on the top of facades

**Feature d.** The briefly buttresses

**Feature e.** The continuous stringcourses on the bottom of facades

**Feature f.** The slender square windows with flat or arch block lintel

**Feature h.** The double-pitch roof

Because these inherited features were so common, the buildings that were completed in this phase are similar with the ones of first phase, even for the

backside of the first phase' ones. Therefore, if there are no historical records about the constructed year, we cannot distinguish which part is the initial one, which part is the build-out one by naked eyes.

The third phase, just as the mentioned above, is a rapid increase build-out period of the Nanyuan campus. The buildings that finished in this phase were the simplest ones than the previous two phases concerned. The inherited or changed features shown as:

**Feature d.** The briefly buttresses

**Feature e\***<sup>75</sup>. The discontinuous stringcourses on the bottom of facades or no stringcourse

**Feature f\***. The slender square windows with flat block lintel

**Feature h\***. The double-pitch roof or deck roof

During this phase, the obviously characteristic is the missing of the battlements and stringcourse on the facades (Figure 3-25).



**Figure 3-25 The Back Side Façade of The Main Building**

### **3.3.3 Analysis the Function of Buildings: Transition progress from Compound to Oneness**

The purpose of the South Manchuria polytechnic school's establishment is to provide the expertise and relevant skill for the practitioners (students) who will engage in the industrial development of the Manchuria region. According to the purpose, there five engineering majors were set up, including architecture, civil engineering, electrical engineering, mechanical engineering and mining<sup>76</sup>. Except the normal classrooms and the staff rooms, the majority rooms were arranged for the special laboratories and the materials and mineral exhibition rooms that easy to teach the knowledge on-sit. In this way, the purpose was to train the qualified engineers as soon as possible. Definitely, said as development, but the

truth is to accelerate the speed of predatory aggression. This truth has been confirmed by the first generation president Ima Kagehiko (今景彦) in his writing: ‘ the school was established in the Meiji 40 years. It is nominally as a private school that belonged to the SMR.Co. , however, everyone should know that our company (満鉄会社) is not an generic for-profit company. Whereas, it is a special organization established here (関東州) with the Japan Imperia government special and intimate mission, which is to ‘development’ the rich mineral Manchuria region. ……For development the Manchuria region, the first condition is to have enough professional talents, who have the professional ability. In addition, they have to know and study the astronomy and geography of Manchuria region and the local culture and customs of china as a knowledge background. …… Therefore the first higher educational institution was established by the company is this industrial school. ……<sup>77</sup>’ .

With this established background, the right that was given to the school by the SMR.Co. was to provide all impossible conveniences for engineers training. As a consequence, a branch school was established in the Fushun Coal Mine (撫順炭坑) where located in the Qianjinzhai (千金寨) area for the student of the Mining Engineering discipline to fastest study and master the professional skills. Later, although this branch school was closed, but there was still as the practice base for the South Manchuria Industrial School. As mentioned in the chapter 2, once, there were many institutions of the SMR.Co., which had been used to the school too. Moreover, in the year of 1917, a dormitory has been constructed in the Nanyuan campus, which greatly facilitated the students’ study and lives.

After the School was upgrade in the year of 1922, there are a great change which had appeared in the Nanyuan campus. Because the school constitution (学校規則) had been revised for two times, the disciplines were also added to 8 from 5. Therefore there were many teaching rooms were required by the revised. In the year of 1937, because the ancillary facilities, included the cafeteria and the dormitory, was moved out, the campus only used for the teaching function. This change is the biggest functional change in the Nanyuan campus that means the function of the campus was transited from Compound to Oneness.

Except the normal teaching functional requires of the school, after the year of 1925, the most distinctive and uncommon feature was a Haizokushoukou Shitsu (配属将校室)<sup>78</sup> where faced to the Dean Room shared the same room area in the central corridor of the main building. The location implied its importance in the school. This unusual room appeared in the campus also implied and illustrated the nature of aggression and militarism of the school has.

The function of each room was shown as the building floor plans in 1921 and in 1940s. Showing in the Appendix 3-b.

### 3.3.4 Summary

The evolution model of the Nanyuan campus before 1945 is shown as the building constructed step by step by the functional requires. During the period of 1912~1922, it mainly showed that the new buildings were constructed slowly in the Nanyuan campus. During the period of 1922~1936, the campus evolution progress was the same as the first period, but relatively fast. For the last phase, between 1936 and 1945, the campus evolution mainly focuses on the buildings' reconstruction works. The evolution speed was relatively fast. In addition the campus' functional component was transformed from teaching-living pattern to only teaching pattern. About the functional evolution of the campus, it will be discuss the details in the next section.

The architectural form and the building style in the Nanyuan campus before 1945 is the **Japanese Colonial Architectural Style** with the Gothic Revival characteristics. Red brick masonry structure partly with the wooden truss and the double- pitch roof are common features of the buildings. The whole evolution progress is summarized in the following Table 3-4.



The Transition of Nanyuan Campus on Planning and Architecture Levels, before 1945					
Zone	1		2	3	4
Years	明治 44 1911	大正 11 1922	1945/08 昭和20 1947 1950 1946 1950 1951		
Transition of Higher Educational Institution	南満洲工業学校	南満洲工業専門学校	大連工学院 大連大学 大連工業専門学校 大連工業専門学校 工学部 化学系		
Quantitative Change	キャンパスの誕生 緩速な平面的成長：新築		急速な平面的成長：新築・増築・改築		
Transition of Campus	<p>Building Density</p> <p>Campus Spread</p> <p>Qualitative Change</p>		<p>Building Density #</p> <p>Campus Area #</p> <p>約36600m<sup>2</sup>に変化した。1931-1935年間敷地東側内で新しい道路を作られて、用約の隙が詰り用途に使われた</p>		
Planning Style	Gothic-eclecticism Style, usually be called Japanese Colonial-style in china No change before 1945.				
Structure Type	<p>Wooden Structure</p> <p>Brick Masonry Stru.</p> <p>R.C. Structure</p> <p>Steel Structure</p>				
Transition of Buildings	<p>Name of Main Building</p> <p>Year of Constructed</p>				
Building Style	<p>Classicism</p> <p>Free-Classic(Japan) Gothic-Eclecticism</p> <p>Soviet Patten socialistic Nationalism</p> <p>Modernism</p>				
Designer	<p>満鉄建築科</p> <p>横井健介</p> <p>岡 大路</p>				

# Date calculated based on records in books of '南滿洲工業學校創立十年誌' & '南滿洲工業專門學校創立三十年誌' & '南滿洲工業專門學校要覽1938', and Others.

? Means accuracy about structure type not ensured

### 3.4 Spatial Analysis: the Transition Progress of Campus Morphology

#### 3.4.1 Overview

Based on the retrace campus site plans and other retrace design papers, the campus' morphology is analyzed in this section. Since the campus occupied not so small area and contained various morphology characteristics, it is almost impossible to grasp the all of them in one time. Therefore, two levels will be used to analyze the campus morphology's evolution progress from the scale of 'Unit' and 'whole'. In the unit level, the research will focus on the analysis of the morphology of campus building and open space; in the Whole level, the research will focus on the analysis of campus axis system and the analysis of the campus structure.

#### 3.4.2 Analysis of the Spatial Morphology on Unit Level

Analysis the morphology of each unit equates to analysis the component of open space and its enclosed elements, which is to clarify the '**figure-ground relation**' of each unit. The '**Unit**' here, especially for the Nanyuan campus, could be identified as the 'basic spatial unite' that is a small scale to a part of building complex or a small group buildings which formed a open space, more important is the dominant function of the enclosed space must be unique. For easy to understanding the unit's morphology, two types of unit has been identified, they are the 'Plus unit' and the 'Minus unit'.

The 'Plus unit' is a general terms, shown as '+', means the unit type was described by the enclosed building's shape. In the 'figure-ground relation', the plus type means the unit is dominated by the 'figure'. In the research, the plus unit will not be emphasized.

Oppositely, the 'Minus unit' means also is a general terms, shown as '-', means the unit type was described by the open space's shape. In the 'figure-ground relation', the minus type means the unit is dominated by the 'ground'. If one unit is belong to the minus unit, it will be emphasized as '- XX' type unit, the 'XX' means the specific feature of one unit.

The unit type is not steady. In the campus evolution progress, on unit's property maybe in this phase is the plus type, but in the next maybe changed to the minus type. The transform of each units of the Nanyuan campus in each year is shown as the Figure 3-26.

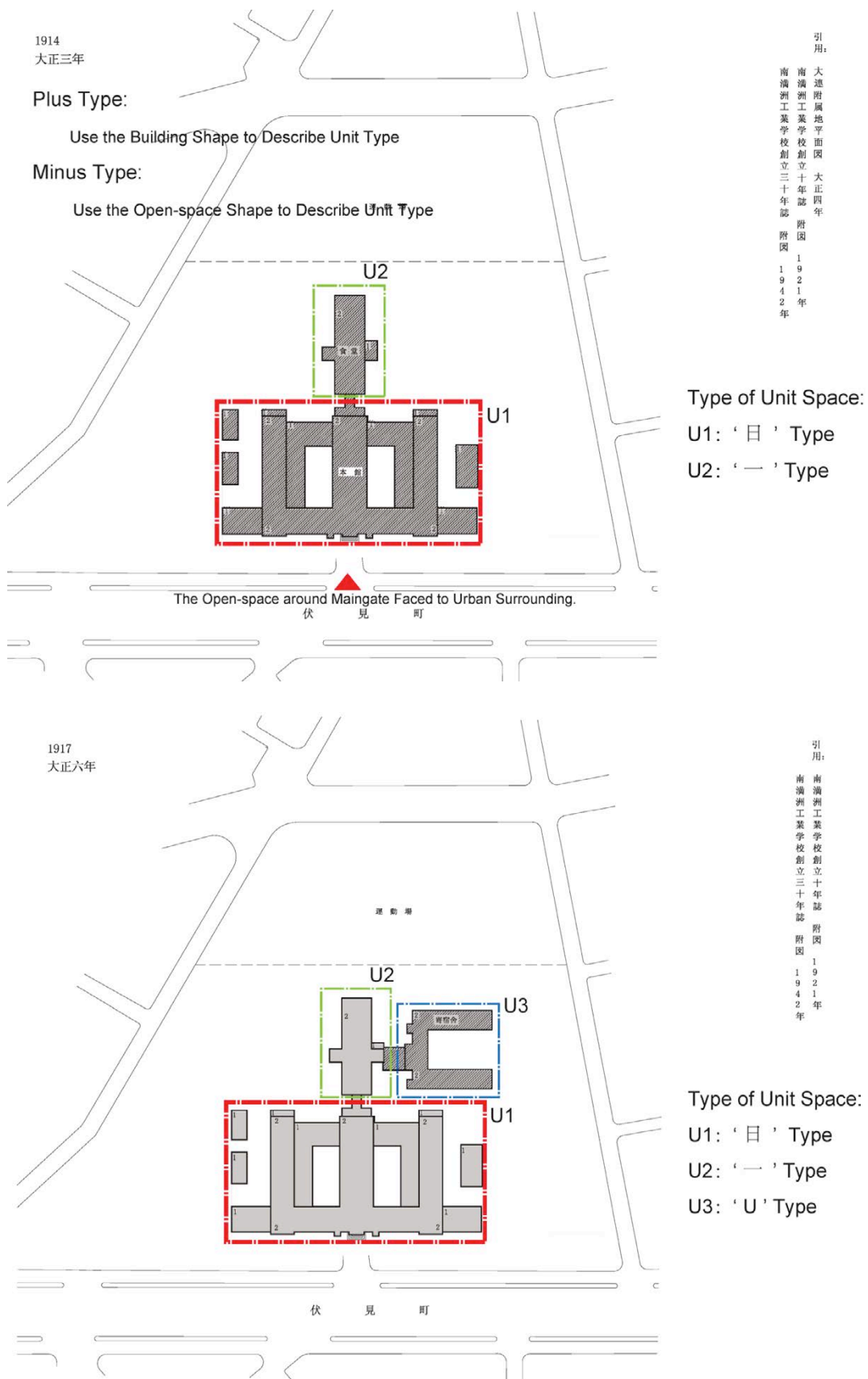


Figure 3-26-1 The Units Transform of The Nanyuan Campus

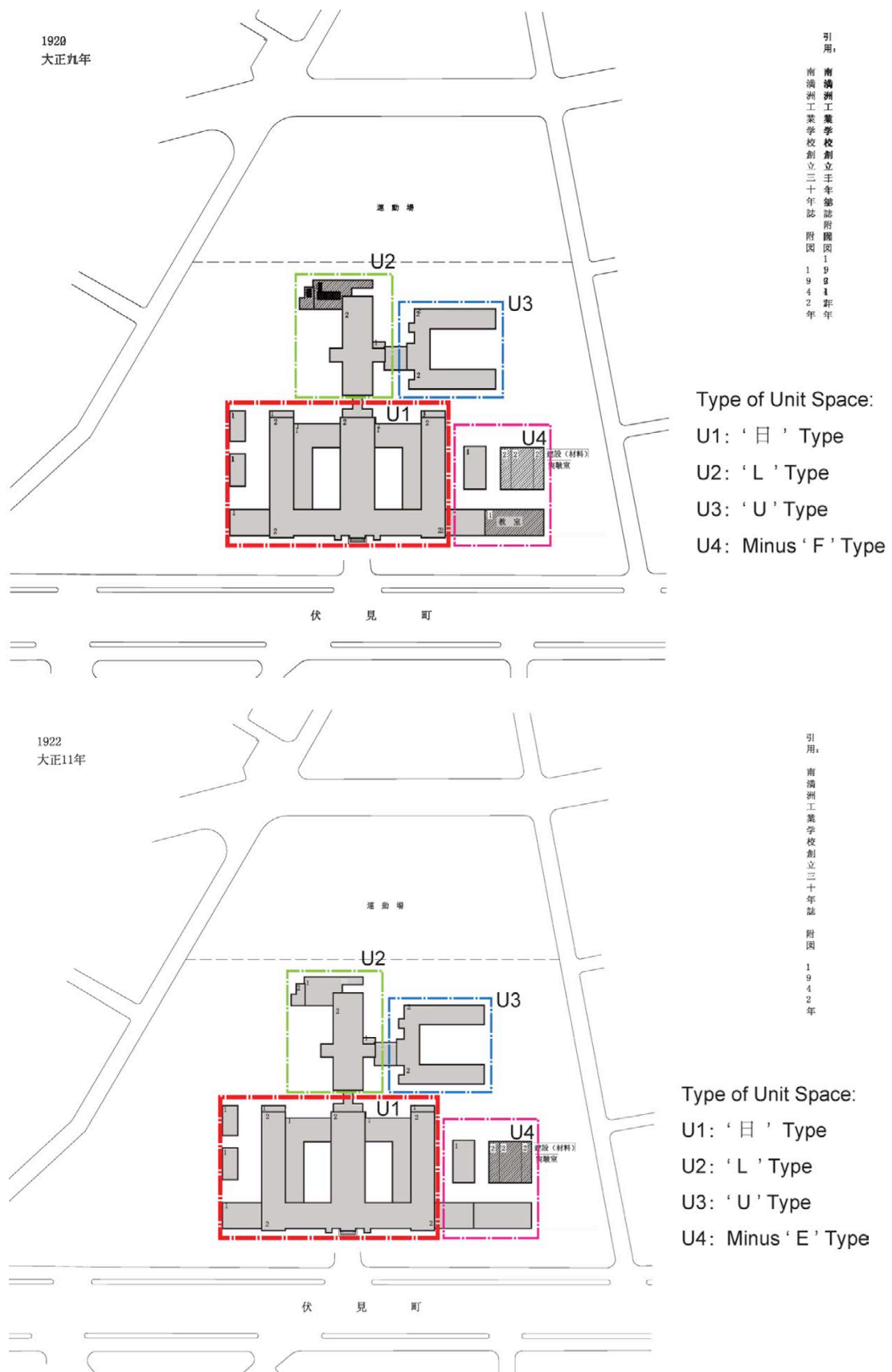
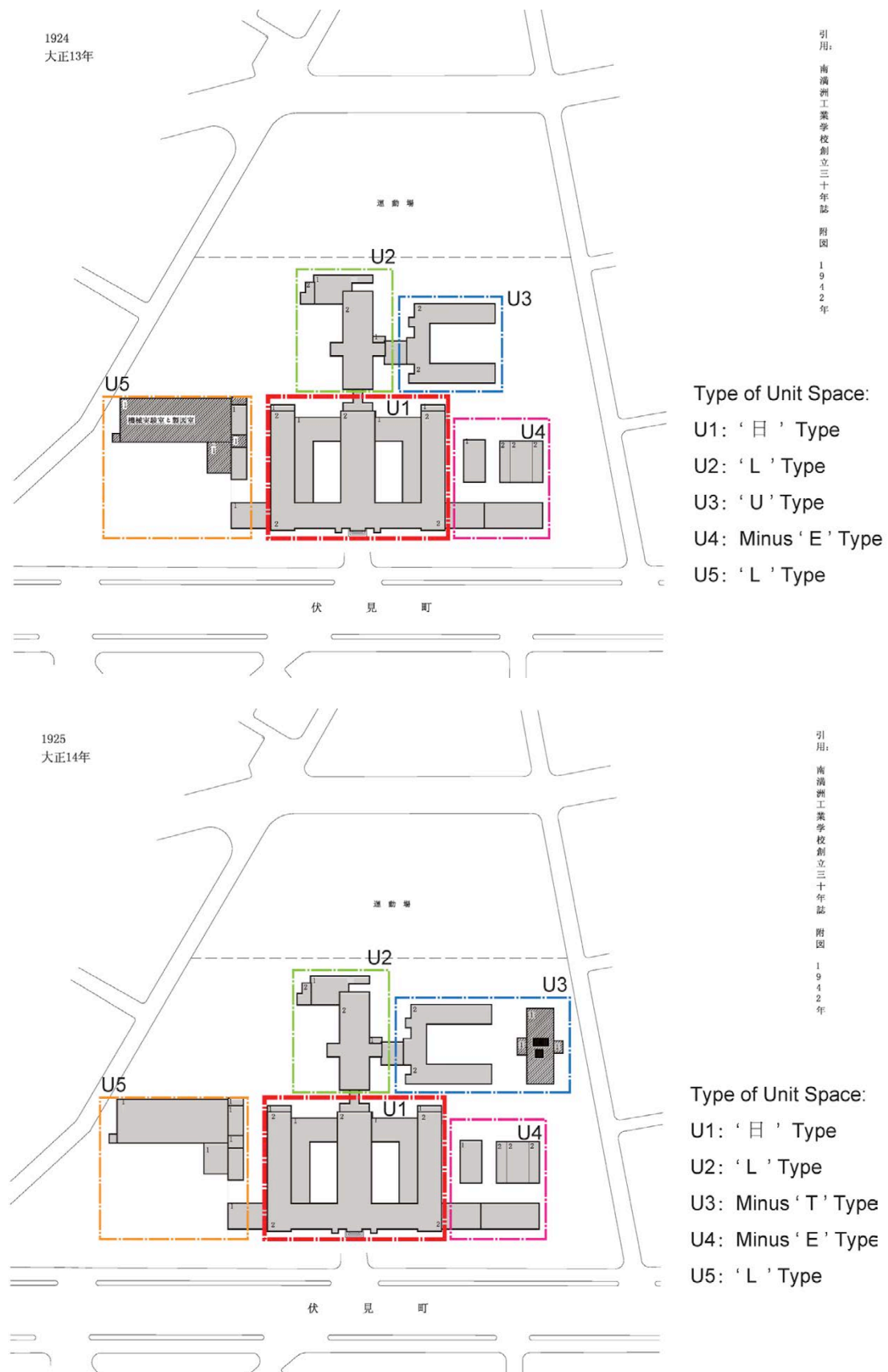
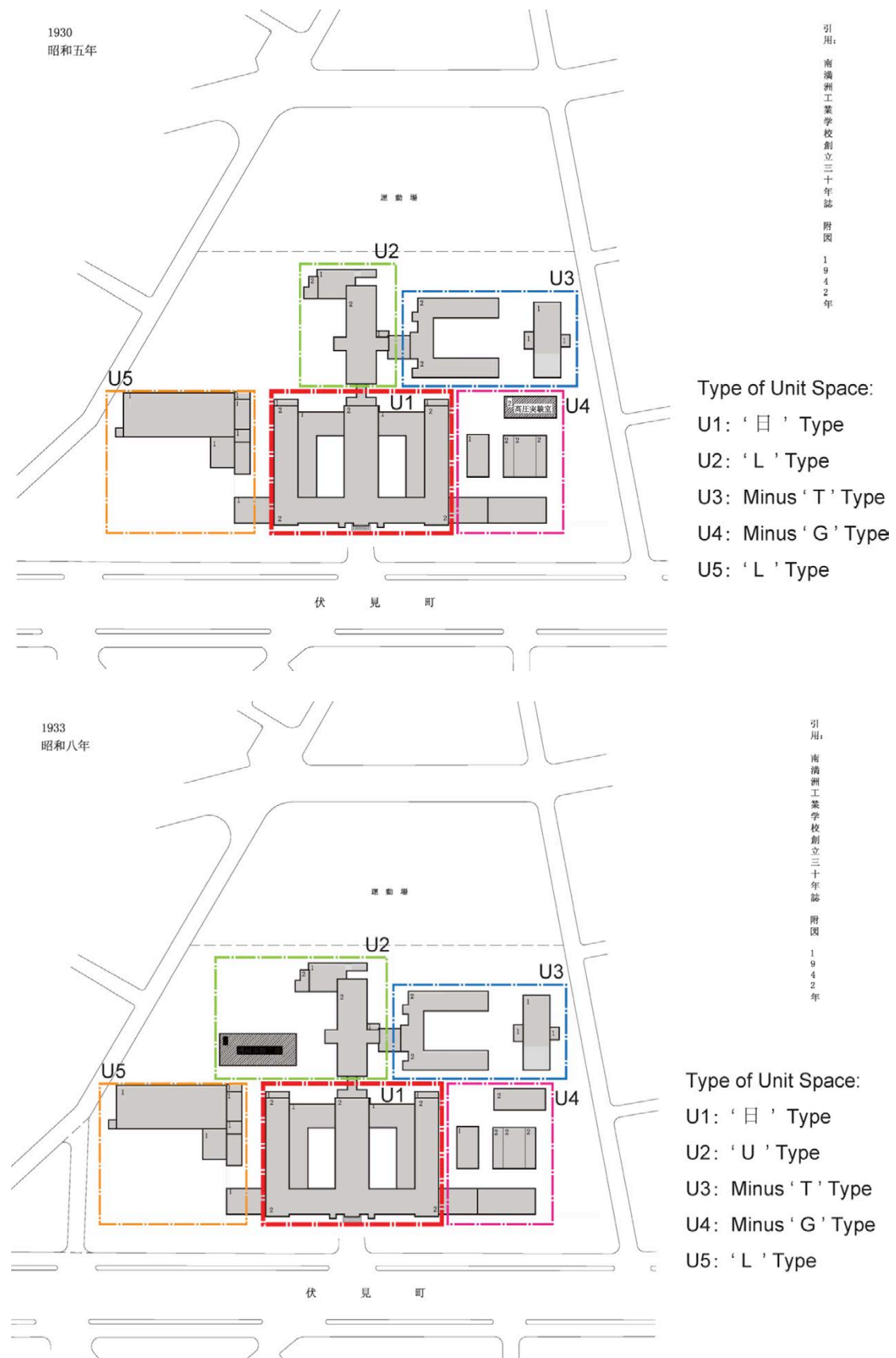


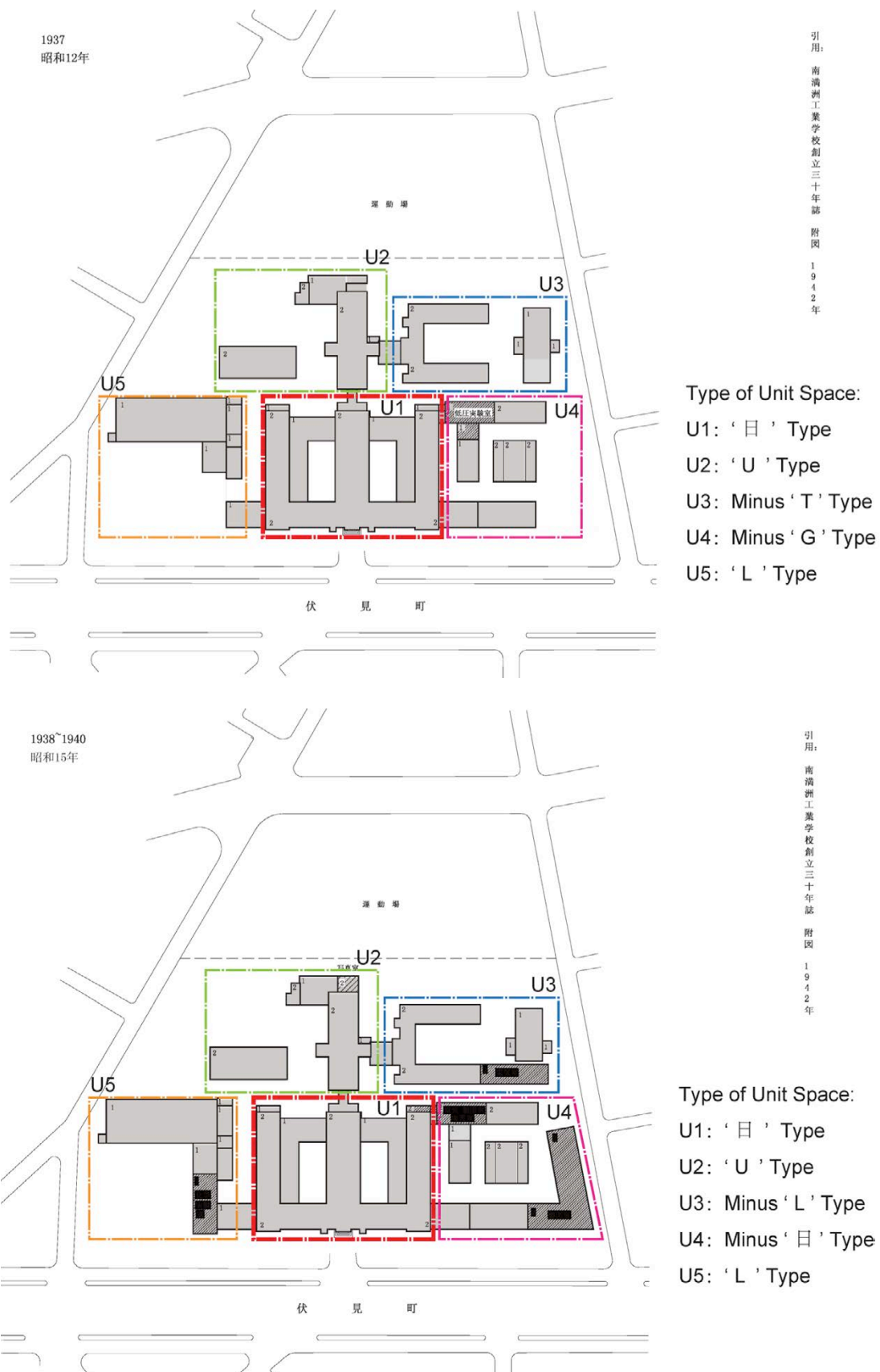
Figure 3-26-2 The Units Transform of The Nanyuan Campus



**Figure 3-26-3 The Units Transform of The Nanyuan Campus**

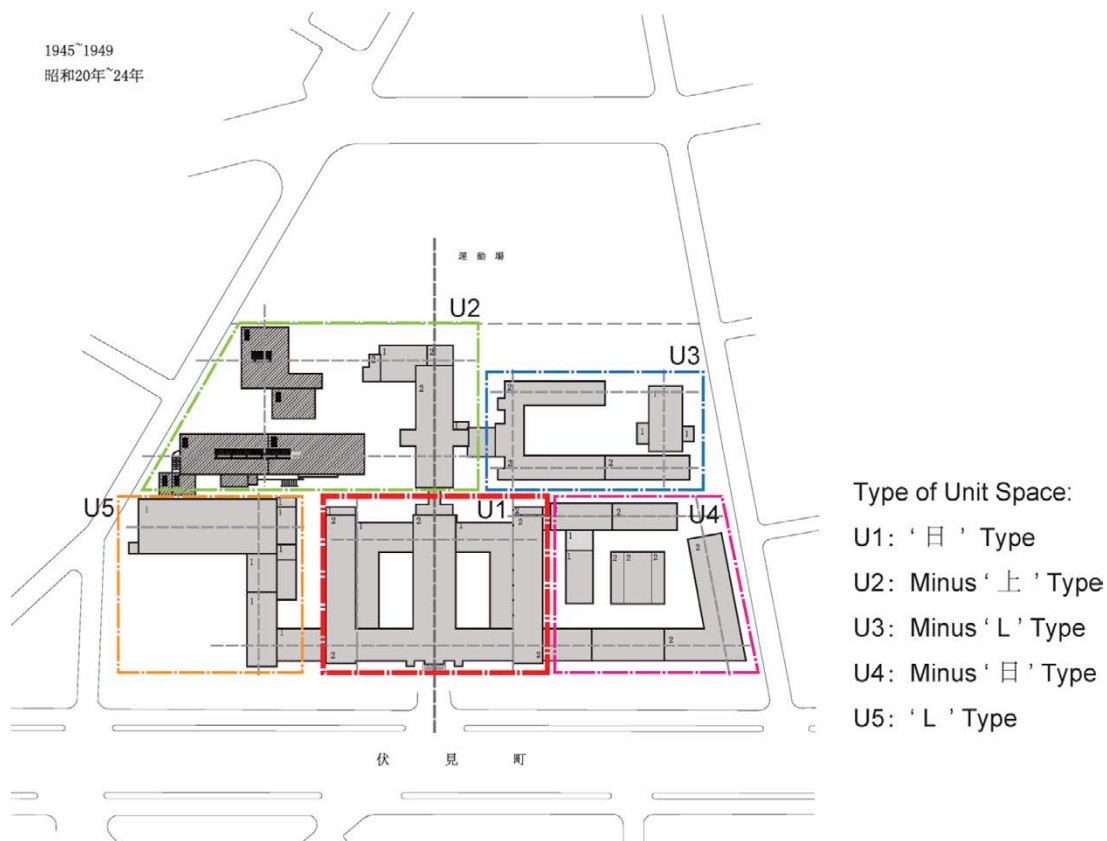


**Figure 3-26-4 The Units Transform of The Nanyuan Campus**



**Figure 3-26-5 The Units Transform of The Nanyuan Campus**





**Figure 3-26-6 The Units Transform of The Nanyuan Campus**

In the year of 1914 when the Nanyuan campus was just constructed, there were only two units in the campus. The unit 1 was a plus '日' type, or called '日' type, unit, it was composed by the main building and its open space. The function of the unit 1 was for teaching. There are two inner yards enclosed by the main building as its open space, they are not only used for the rest place for the students and teachers, but also were the daylight opening for the surrounding rooms; For the Unit 2 The Bekkan (別館) is the dominated element surrounded by the open space, shown as the plus '一' type, or called the '一' type. The function of it was severed as the cafeteria at that time. There are no details records of its open space in the historical document.

In the year of 1917, a new unit, unit 3, was established in the campus site, due to the student's dormitory was construction completed as a part of the Bekkan (別館). The unit 3 was the 'U' type unit with a semi-enclosed property open space, which a litter garden was designed in it. This unit 3 was mainly severed for the student's daily life. The special characteristic of the unit 3 was that its closed end was connecting with the unit 2 and its open end was faced to the boundary of the campus site.

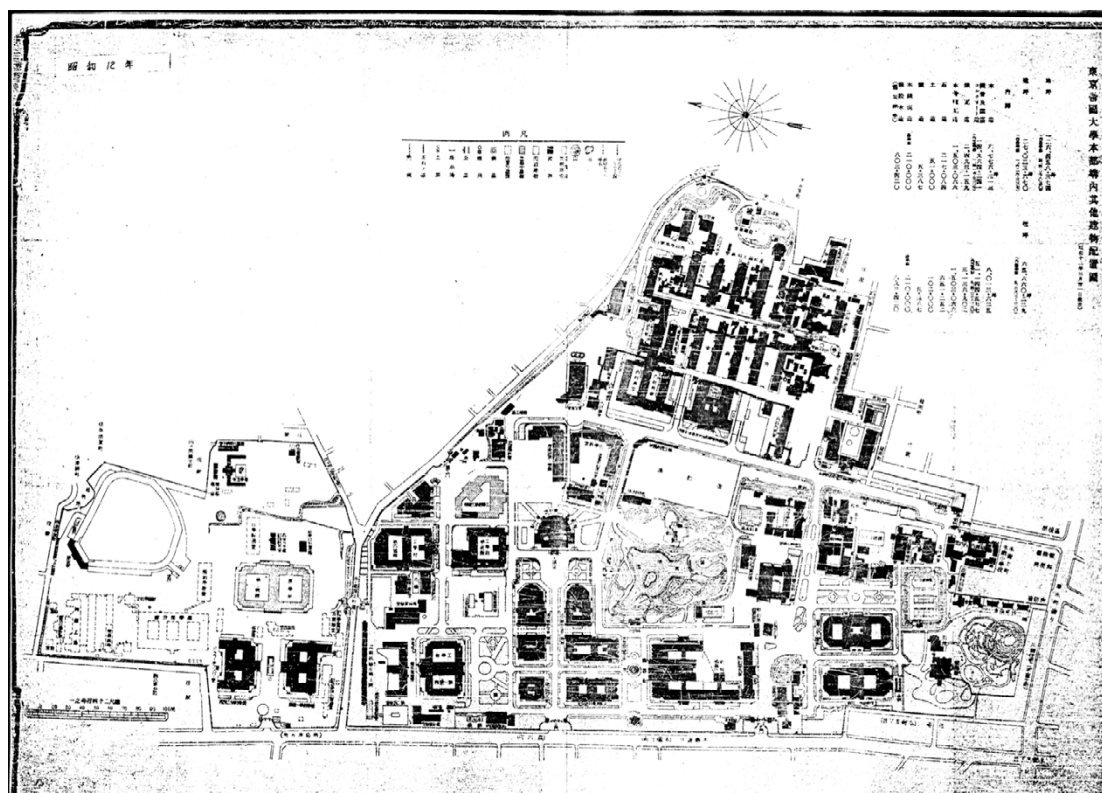


After 1920, there was a big change of the campus units' organization, due to the build-out of the main building and the Bekkan (別館). The two classrooms' constructed led to new unit 4, which has been established in the northwest of the campus site, and it shared a same boundary with the unit 1. The unit 4 is a minus 'F' type unit. The buildings were used for teaching and its open space was used as the sport area for student. Its neighbor, unit 1, except the west boundary was shared, no change happened of it. The build out of the kitchen also made the unit 2 change its form from the '一' type to the 'L' type, which means that the openness of it closed than before.

With the school's upgrade in 1922, serious laboratory rooms had been constructed in the unit 4, which was led the unit form to the minus 'E' type from the minus 'F' type. This transform also made the openness of the unit closer than before. In addition, the open end of the unit was faced to the campus site boundary too and a basketball court was set here. From this year, the unit 4 was mainly used as the teaching zone for the Architecture discipline and the Civil Engineering discipline.

A new mechanical laboratory and drafting room were constructed in the lowland on the east of unit 1 in 1925, due to expand of the Mechanical Engineering discipline. The most remarkable of it was the open space in the front of this new build was also redesigned in the same period. The original garden had been transformed to a new tennis court<sup>79</sup> that made there have two tennis courts in the front of the building. Finally, these court and the surrounding buildings composed the unit 5, which unit form was the 'L' type. The property of its open space was semi-open one, opened to the campus site boundary and faced to the urban main road, the Fushimi-machi (伏見町)<sup>80</sup>.

In addition, due to the Budo-jyo (武道場)<sup>81</sup>'s construction in the same year, the form and property of unit 3 were transformed from the semi-close's 'U' type to the relatively closed 'T' type. Here, it need to be emphasized that the 'T' type unit was the dominated unit's form of the Hongo campus of the University of Tokyo (東京大学本郷キャンパス) after the year of 1923 when the campus site was replanned by Uchida Yoshikazu (内田祥三, 1885-1972) (Figure 3-27), which due to the Great kanto Earthquake (関東大震災)<sup>82</sup>.



**Figure 3-27 The Campus Site Plan of UT In 1937**

Until the year of 1930, the build-out of the unit 4 was still continuing. Due to the new High voltage electrical laboratory was established, the unit form of it changed to the minus 'G' type that means its open space was relatively closer than before. However, there was no changed in other units.

In the end of the second phase of the evolution of the Nanyuan Campus, 1923, the boundary of unit 2 has been broke by the construction of the mechanical internship factory (機械實習工場). At the same time, the function of the unit 2 was become to mix with the teaching and living two functions. The unit form of it was also transformed to the semi-closed 'U' type. Actually, starting from this year, the evolution of unit 2 was kicked off until to 1990s, made this unit was changed to a unit with the most complex function and the most obscure form in the Nanyuan campus.

In the year of 1937, the boundary of the unit 4 was changed to very clear, due to the low voltage electrical laboratory was constructed. According to the campus site plan that attached on the historical document, '南滿洲工業專門学校要覽', in 1938, although the unit 4 transformed more close, the basketball court was still remained at the open end of unit 4. The research suggests that in the campus evolution progress, to avoid using the sport area to the build area maybe was an important principal for the campus construction work.

It was a large-scale reconstruction work period during 1938 ~1940. In this 3 years, a great change for each unit' form and property appeared. Definitely, there was no change for unit 1 as usually, the unit form and unit property were the closed '日' type. Although the form of unit 2 no change too, but the unit function was changed a lot due to the cafeteria reused as the student activity room (学生控室) and firearms room was added to it. For the unit 3, the form transformed to the minus 'L' type that was almost closed for its open space, caused by a new electrical laboratory was established. The unit 4 was transformed its form to the almost closed minus '日' type, caused by the original basketball court was rebuild to the drafting room and other facilities of the architecture and the civil Engineering disciplines. In the unit 5, because the new applied chemistry laboratory was building in the area, and the boundary was turned much clear than before, although the unit form was still the 'L' type.

Above all, the characteristics of the Nanyuan campus' evolution progress have been illustrated in the Table 3-5. The insufficient is that the evolution progress haven't been revealed by the research, due to there is no enough and affirmably records can be clarified the details of the progress. But one point is clear that the evolution of the campus after 1940 mainly happened in the unit 2, for example, the build-out of the mechanical internship factory<sup>83</sup>.

According to the analysis above, the summary is that:

a. The unit 1 was the main unit of the Nanyuan campus, shown as the closed '日' type. There is no change during the 30 years campus' evolution. The unit form also was a common but typical architectural feature for the Japanese building at that era<sup>84</sup>.

b. For each unit, there was a main function dominated the unit, shared the school teaching needs of each discipline and met the needs of teachers and students' daily life.

c. The form and property's transform of each unit are met a regular that from open to closed, which is the biggest feature of the campus' evolution.

d. The unit 1, unit 4 and unit 5 are performance as the separate units inner of the campus site, whereas, in the urban surrounding, they are shown as a single unit with a continuous open space, the main entrance space of the campus. As mentioned in the above section, it is a transition space linking the campus with the urban surrounding.

**Table 3-5 Characteristics of Nanyuan Unit and Space Before 1945**

	U1		U2		U3		U4		U5	
	Type	Openness	Type	Openness	Type	Openness	Type	Openness	Type	Openness
1914	+ 日	5	+ 一	1						
1917	+ 日	5	+ 一	1	+ U	3				
1920	+ 日	5	+ L	2	+ U	3	- F	2		
1922	+ 日	5	+ L	2	+ U	3	- E	3		
1924	+ 日	5	+ L	2	+ U	3	- F	3	+ L	2
1925	+ 日	5	+ L	2	- T	4	- F	3	+ L	2
1930	+ 日	5	+ L	2	- T	4	- G	4	+ L	2
1933	+ 日	5	+ U	3	- T	4	- G	4	+ L	2
1937	+ 日	5	+ U	3	- T	4	- G	4	+ L	2
1938- 1940	+ 日	5	+ U	3	- L	5	- 日	5	+ L	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Annotation	+: Plus Unit. Use the Building Shape to Describe Unit Type -: Minus Unit. Use the Open-space Shape to Describe Unit Type									
	Number to describe Openness of Unit Space from Open to Close: 1 open—2 Largely Open—3 Middle—4 Largely Close—5 Close									

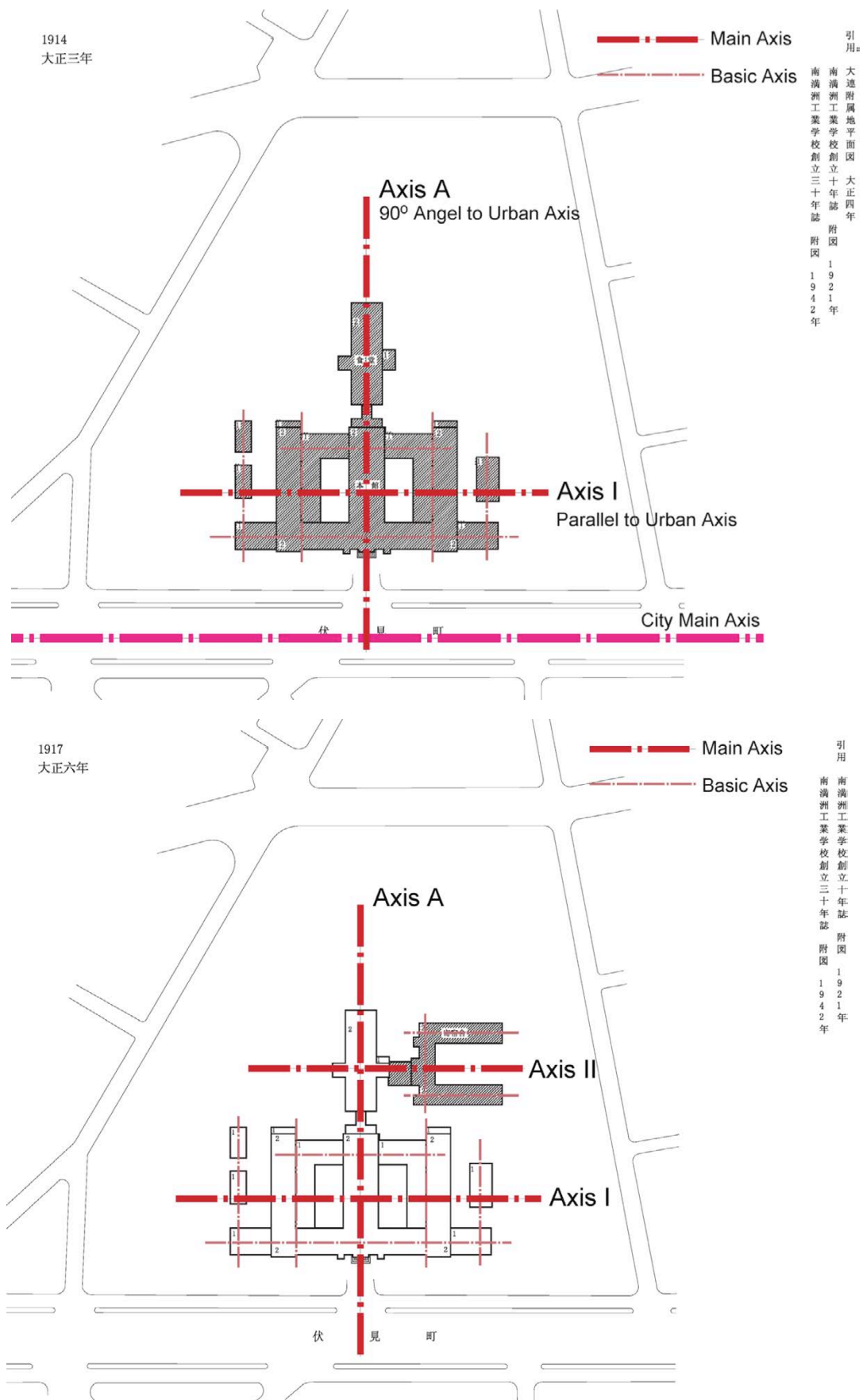
### 3.4.3 Analysis the Spatial Morphology on Whole Level

To analyze the campus spatial morphology on the whole level can be resolved by this two analysis: The analysis of the axis system of the campus and the analysis on the planning structure of the campus.

a. Analysis on the axis system of the Nanyuan campus.

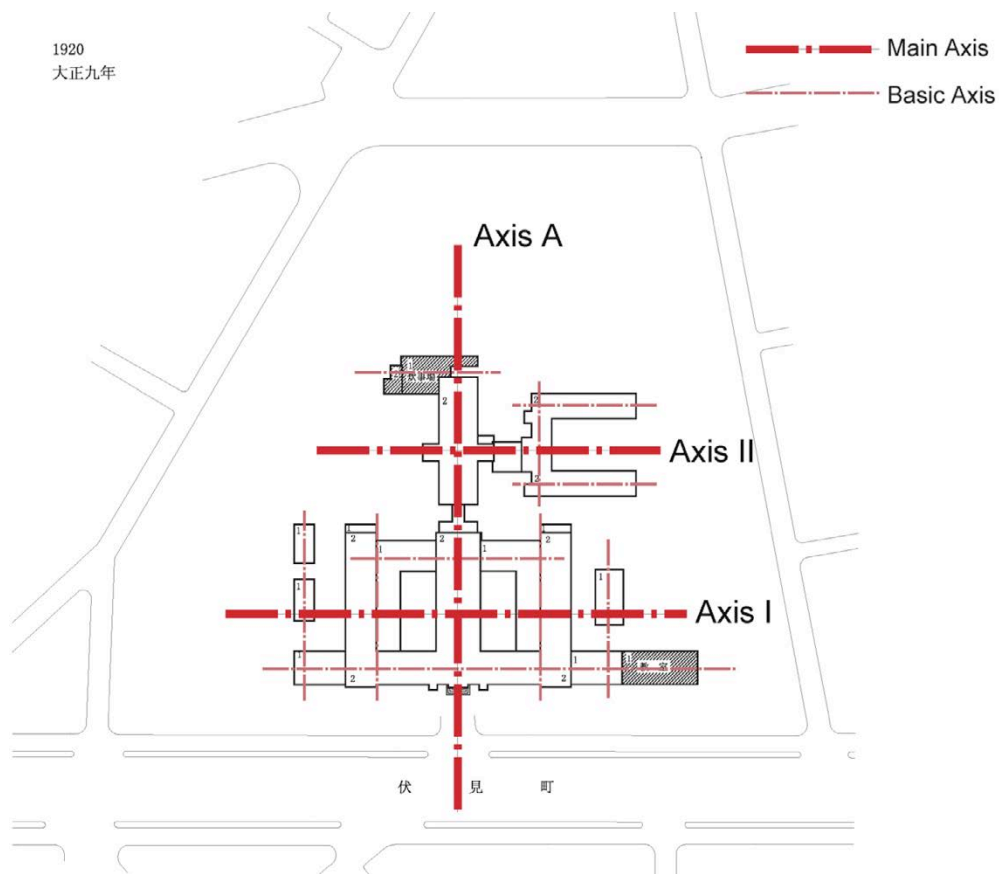
It is obvious that the establishment of the axis system is based on the urban road. Because there is a orthogonal relation between the campus main axis and

the urban main road, the Fushimi-machi (伏見町). Although there was continuously construction works had been done during those 35 years before 1945, all the buildings were under the control of this axis system. Based on the historical document of the South Manchuria polytechnic School, the research deemed that the 'fishbone' style axis system was be used to design the Nanyuan campus from the beginning. It showed that the Axis A was 'the main bone of the fish', and the Axis I & II were 'the main branch bone of the fish'. The following Figure 3-28 shows the transition progress of the Nanyuan campus that based on the analysis of the axis system.



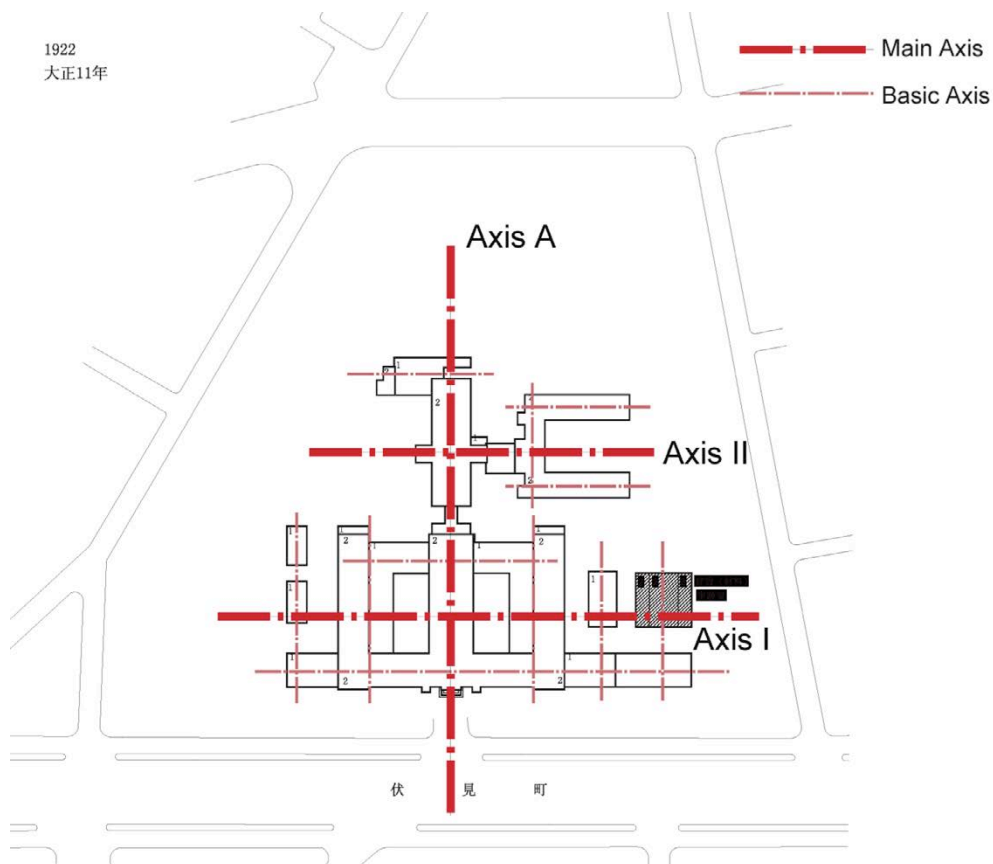
**Figure 3-28-1 The Transition of The Campus Analysis**

1920  
大正九年



引用  
南満洲工業学校創立十年誌  
南満洲工業学校創立三十年誌  
附図  
1921年  
1942年

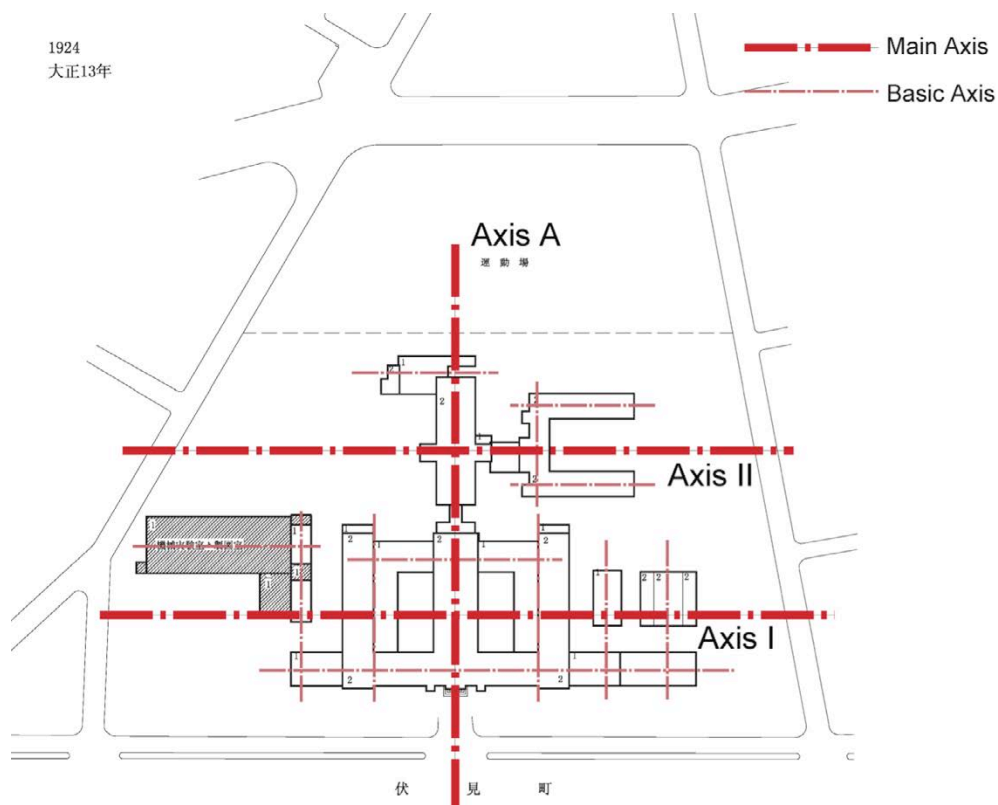
1922  
大正11年



引用  
南満洲工業学校創立十年誌  
南満洲工業学校創立三十年誌  
附図  
1942年

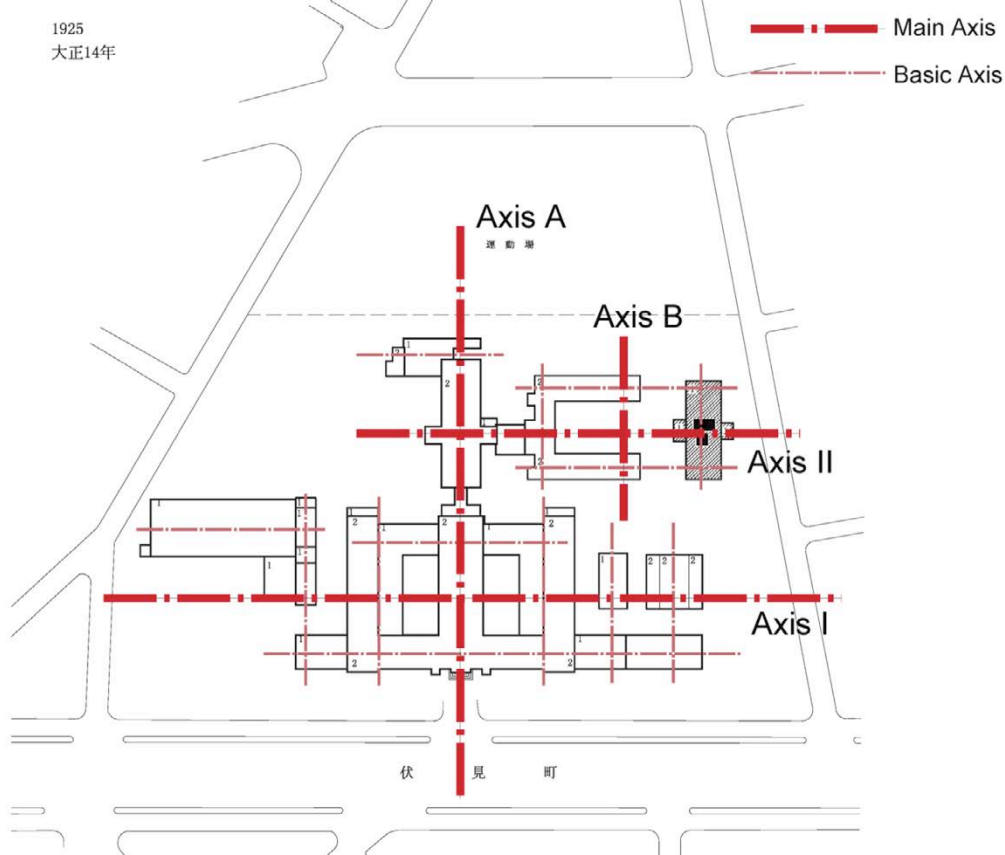
**Figure 3-28-2 The Transition of The Campus Analysis**

1924  
大正13年



引用  
南滿洲工業學校創立三十年誌  
附圖  
1942年

1925  
大正14年

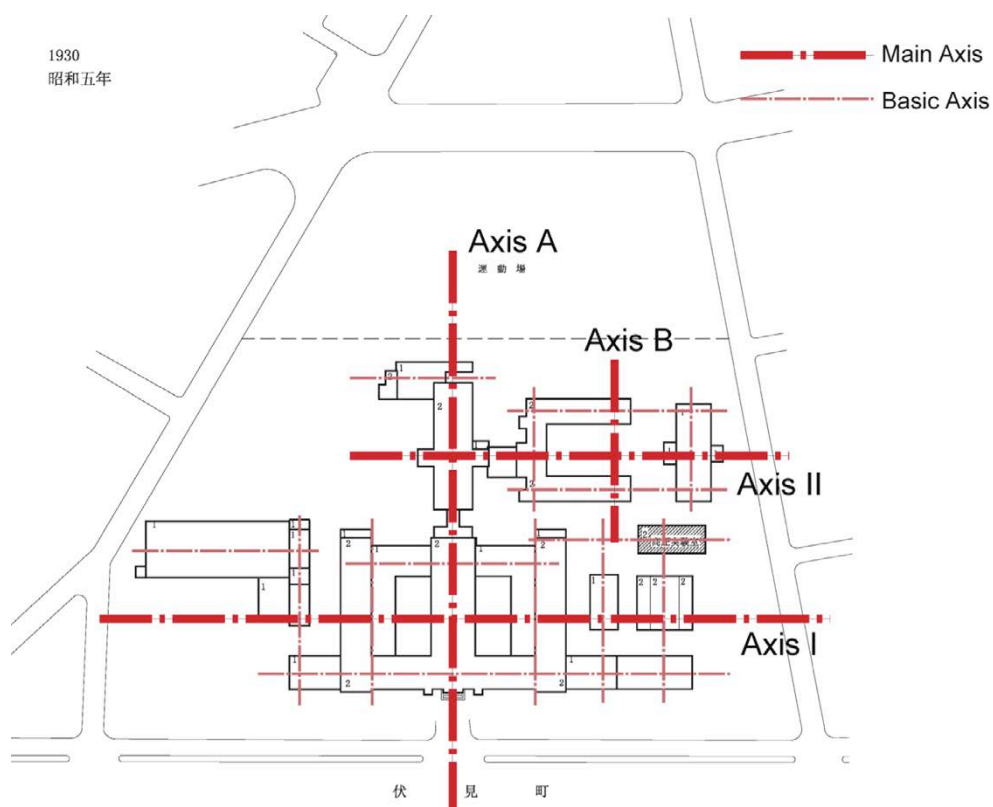


引用  
南滿洲工業學校創立三十年誌  
附圖  
1942年

Figure 3-28-3 The Transition of The Campus Analysis

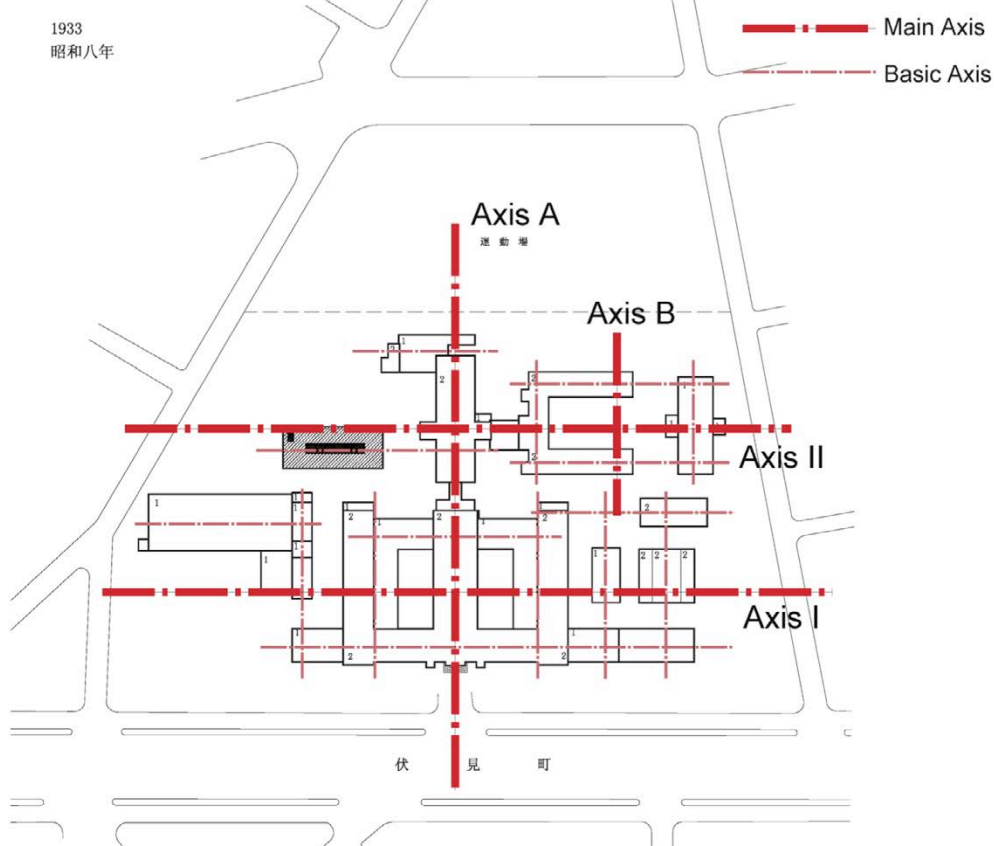


1930  
昭和五年



引用  
南満洲工業学校創立三十年誌  
附図  
1942年

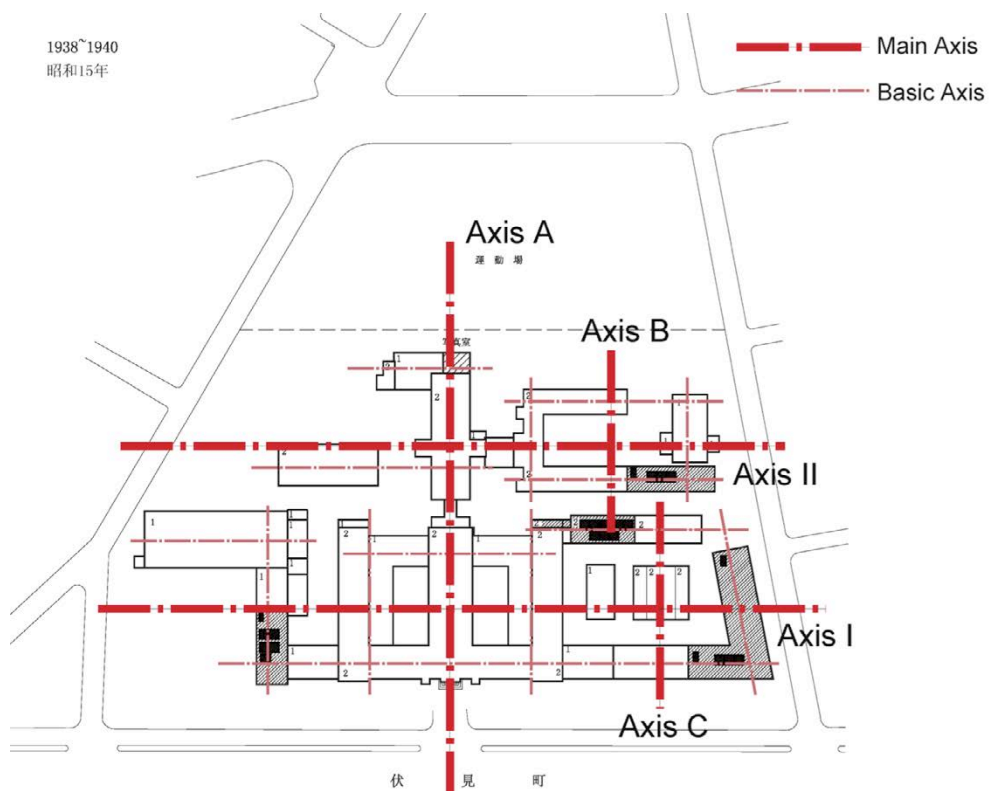
1933  
昭和八年



引用  
南満洲工業学校創立三十年誌  
附図  
1942年

Figure 3-28-4 The Transition of The Campus Analysis

1938~1940  
昭和15年



引用 南滿洲工業学校創立三十年誌 附図 1942年

1940~1949  
昭和15年~24年

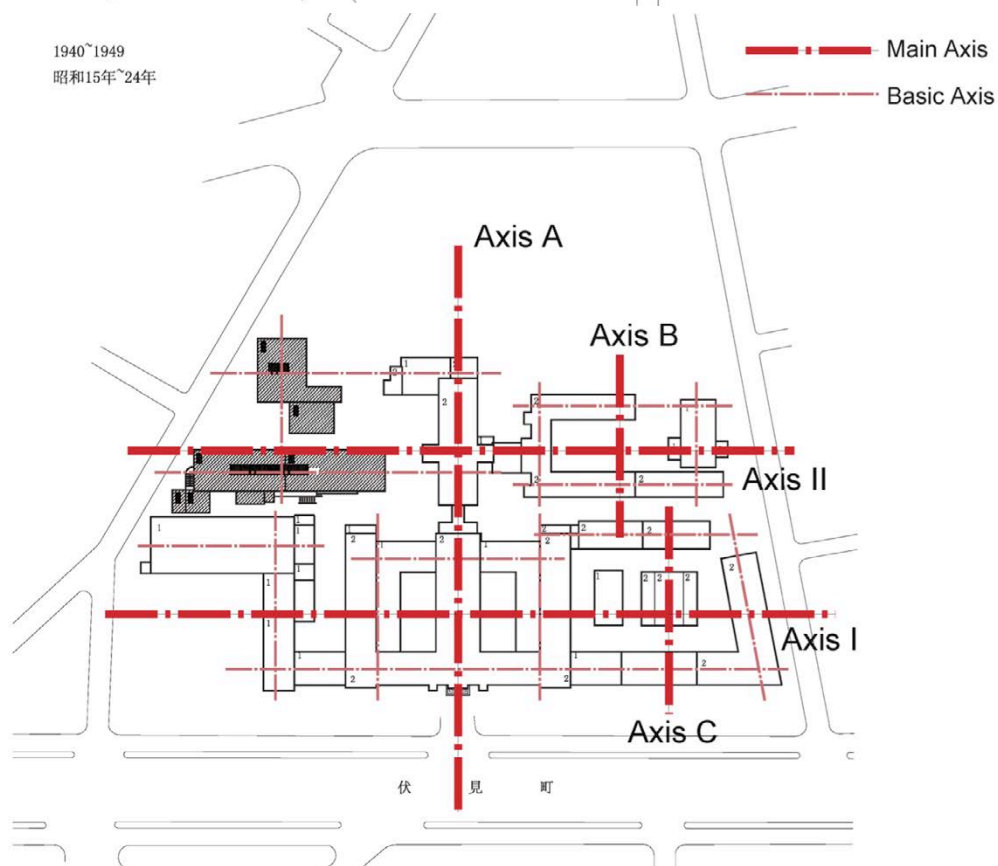


Figure 3-28-5 The Transition of The Campus Analysis

There are two axes, the axis A and the Axis I, were included in the campus site plan of the year 1914. They are orthogonal relation, as the first level axes of the campus, controlled the sub-axes system. As mentioned above, the axis A is perpendicular to the Fushimi-machi and the axis I is parallel to the Fushimi-machi. It is very clearly that the development of campus in the vertical direction was controlled by the axis A. It linked the main building (本館) and the Bekkan (別館) together, composed as the main frame structure of the Nanyuan campus. Similarly, the layout of the campus buildings in the Parallel direction was controlled by the axis I. it not only charged the development of the main building, but also the location of the other laboratory buildings. The sub-axis network, as the second level axes, was outward extended itself based on the '日' type axis basement. In this way, there was a harmonious relationship between the main building and the other surrounding buildings.

In the campus site plan of 1917, the horizontal axis II is shown. If the research deemed the main building was controlled by the axis I, then the Bekkan (別館) was just controlled by the axis II. It is obvious that the layout and location was in the control of the axis II. In addition, according to the historical document, the official campus site plan in 1921, there was a second dormitory that had been planned where is generally symmetric of the cafeteria with the constructed one. However, due to he need of other functions, this planning has not been realized. Whereas, as can be seen from this planning that the importance of the axis II was conformed. Until year of 1945, the campus development was always under this the axis system that was composed by the axis A, the axis I and the axis II. On the sub-axis network level, the harmonious relationship can be deemed between the axis I and axis II, for example, the dormitory and the main building is shared one sub-axis as the figure shown.

In the year of 1920, the build-out of the kitchen was based on the sub-axis that was controlled by the axis II. This build-out part was the southernmost building in the campus, due to the construction of the building was limited by the boundary of the playground. The build-out two classroom of the main building was based on the '日' type sub-axis that was controlled by the axis I. The two parts build-out buildings in this year, one located in the northwest of the campus and one located in the southeast of the campus, made form of the building group in the Nanyuan campus keep in balance.

The build-out in 1922 and 1924 were in the controlling of the axis I. the details were shown as the constructional material laboratory was constructed. And the scale was similar to its neighborhood on the western side of the main

building and the mechanical laboratory (include the drafting room) with a tennis court in front of it. It was constructed in the east of the main building at the lowland area. The buildings as the entities and the tennis court as insubstantiality, build-out in this way was just a result based on the consideration of the campus site's terrain. Because there are 3 or 4 meters altitude difference in the site, plan in this way was better to balance the Main façade of the building group.

The new constructed building in 1925 was in the control of Axis II. As the mentioned above the section, this year in the area a closed unit had been established, caused by the construction of the Budo-jyo (武道場). Therefore, a new axis B appeared in this area.

In the year of 1930 and 1937, the high voltage and the low voltage electrical laboratories were constructed in the controlling of the axis I, followed the sub-axis of the main building. Therefore, a very clear range appeared in the western part of the main building.

The construction of the mechanical internship factory adjusted the campus form balance too. It was the first time to use the land where the new buildings would be constructed in the east of axis II. The new building was located in the north side of the axis II, which was supposed to reserve the constructional land in the south side.

Buildings generated between 1938~1940 was to enrich and improve the campus sub-axis network. The progress is shown as each unit of the Nanyuan campus which was enclosed step by step, finally, all of the units in closed or semi-closed form. Meanwhile, the axis C is shown too.

In conclusion, the campus morphology evolution was charged by the axis system which mainly composed by the axis A, axis I and axis II, shown as the 'fishbone' style structure. The sub-axis network under the influence of the first level axes, based on the '日' type basic form, not only parallel but also enclosure to develop itself. Consequently, in the analysis' figures, a serious of enclosed and separated but interrelated units are shown.

#### b. Analysis on the planning structure of the Nanyuan campus

According to the analysis of the axis system in above section, there is a clear function partitioning in the campus site has already known. The partitioning was arranged in parallel relation with each other in the campus vertical direction. Hence, The planning structure just followed this partitioning. The Figure 3-29 shows the analysis of the evolution progress of the campus structure. In the

section, the analysis will focus on two parts: the first is the evolution of the structure pattern and the second is the treatment of the altitude difference in the campus site.

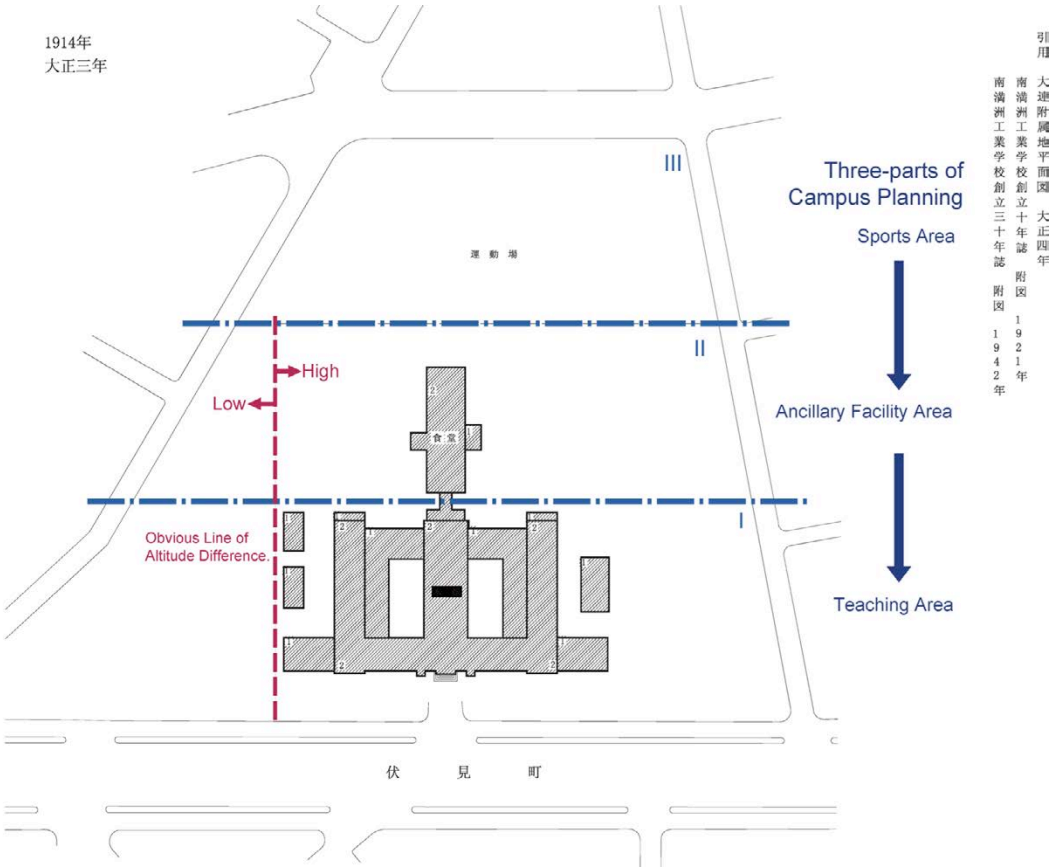
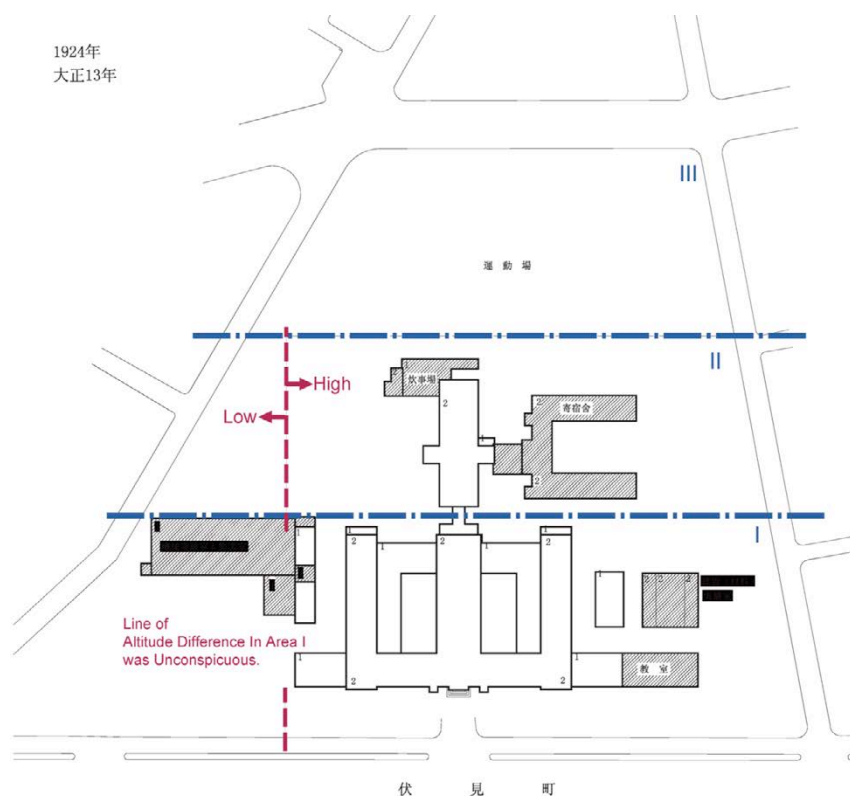
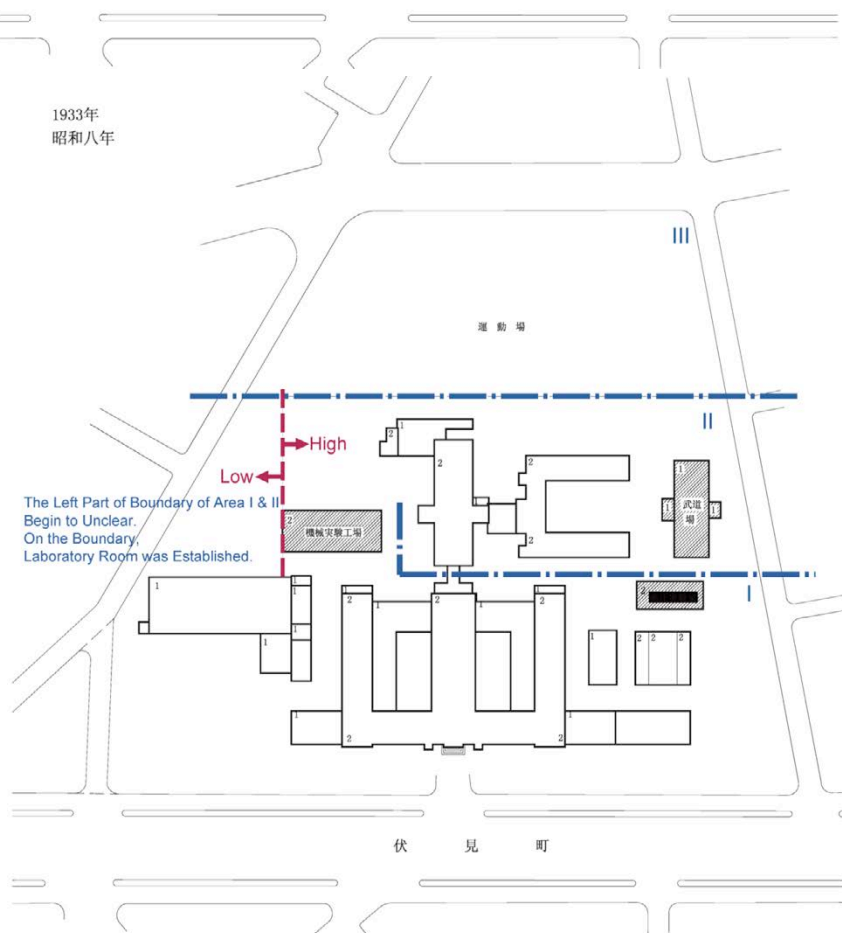


Figure 3-29-1 The Transition of The Site Structure of Nanyuan Campus

1924年  
大正13年



1933年  
昭和八年



引用  
南満洲工業学校創立三十年誌  
附図  
1942年

引用:  
南満洲工業学校創立三十年誌  
附図  
1942年

Figure 3-29-2 The Transition of The Site Structure of Nanyuan Campus

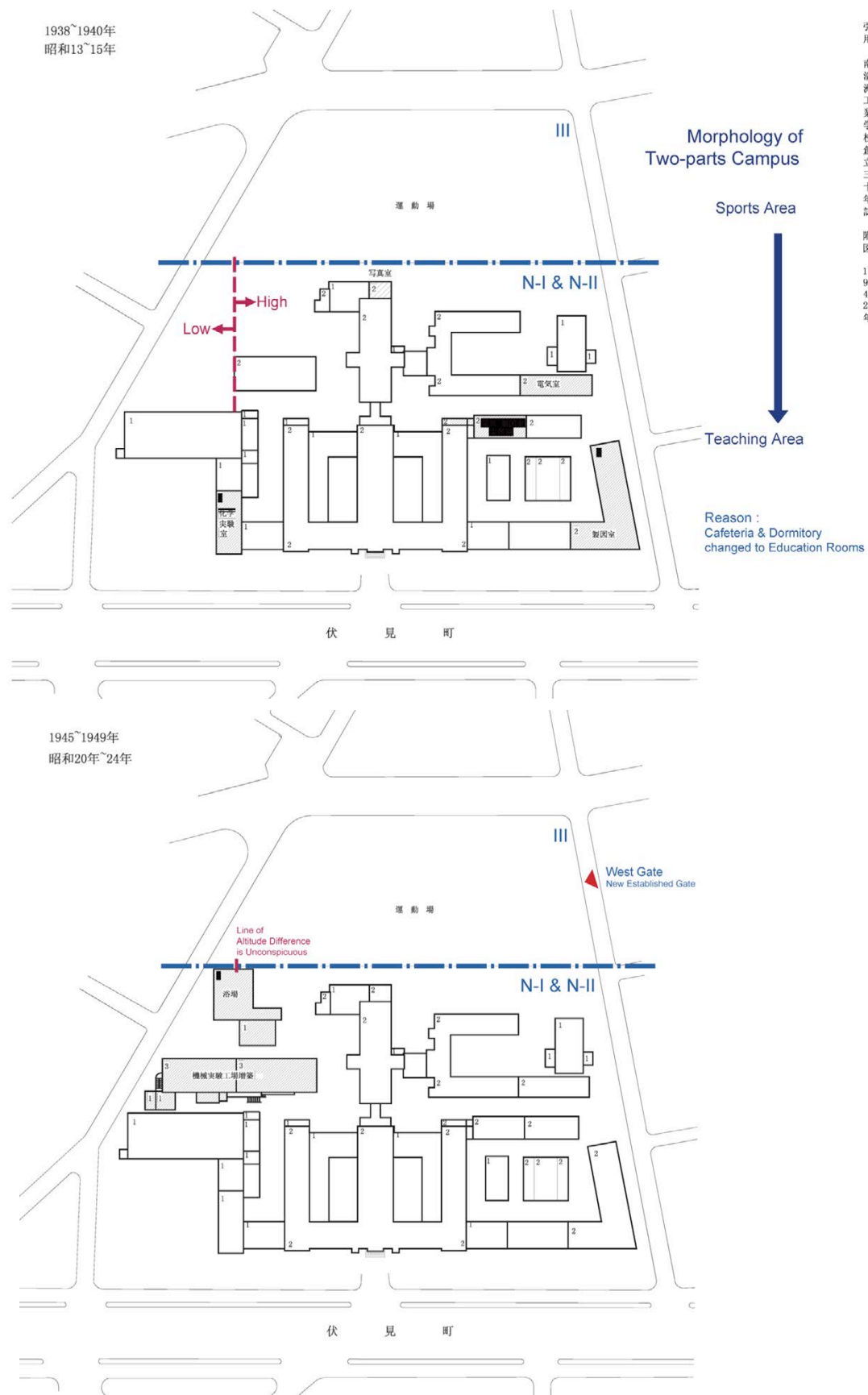


Figure 3-29-3 The Transition of The Site Structure of Nanyuan Campus

There is an obvious research result on the analysis graphic of 1914, in the campus vertical direction, the three zones are arranged in parallel. The Nanyuan campus had the 3-zones pattern structure in this period. From the Fushimi-machi to the inside of the campus, the Teaching area (Zone I), the Ancillary Facility area (Zone II) and the Sports area (Zone III) were set one by one. The property of each area was decided by the function of their inner infrastructures. In this year, the property of the zone I that was the teaching area and the zone III that was the sport area are distinct, but for the zone II the property was not so clear because the campus was just established and only a cafeteria was constructed. In addition, the red dotted line in the analysis graphic means the altitude difference of the site. In the campus, the height was about 3~4 meters high and the east side was low, the west side was high. In addition, this altitude difference was limited by the accessory occupancies that located in the east of the main building, which made it very clear. Moreover, according to the historical documents records (南滿洲工業学校, 1921), in the low land there were a garden and a tennis court which had been established after the main building constructed, but there was no more details about that. For this landscape design, this research suggests that this is a kind of rational utilization of the campus' topographic condition and means the designers had been given a deep consideration to the campus planning.

Until 1924, there was a great change in the Nanyuan campus, but 3-zones pattern structure was still remained. It is obvious that all the build-outs were followed this structure. Especially for the zone II, its property was clearer than before, due to the students' dormitory was constructed beside the cafeteria in 1917 and the build-out of the kitchen in 1920. Another obvious change is the altitude difference in Zone I was more inconspicuously than before, due to the mechanical laboratory and drafting room was constructed here in 1924. Especially due to the buildings at the high side as a kind of occlude, made very difficult to identify the difference in height of the terrain.

In the year of 1933, because the mechanical internship factory was constructed at the edge of the altitude difference in the zone II, it brought two affect to the campus: One is that it strengthened the elevation change of the site; another is that it broke the unity of the zone II's property, a part of teaching function was add to the ancillary facility zone. Therefore, the east boundary between the zone I and the zone II changed to unclear.

Caused by the reconstruction of the original cafeteria and dormitory, the ancillary facilities were moved out of the Nanyuan campus and the original



rooms were renewed as the teaching and office rooms. The new zone N-I&N-II was combined with the original the zone I and the zone II. The new zone was used as the teaching area. Hence, the campus structure was transformed from the 3-Zones Pattern to the 2-Zones Pattern. About the altitude difference, the new constructed applied chemistry laboratory made it relatively inconspicuous, but it was also evident in the original zone II. The inconspicuously treated of it was after the year of 1940, due to the build-out the mechanical internship factory.

According the analysis above, it is obviously that the construction works before 1945 were mainly built in the north part of the campus site. And the function of the zone III was in steady state. It is also confirmed that the authenticity of the records: ‘……but to use the Playground as construction land is definitely avoided thing for the school development……’, which from the readme was wrote by the third generation dean Oka Oji (岡大路)<sup>85</sup>.

#### 3.4.4 Conclusion the Features of Campus Spatial Morphology

The summary of the Nanyuan campus characteristics and the evolution progress are as the follows:

- a. The transition of campus site plan was caused by the continuous build-out that meet with the teaching require step by step.
- b. The whole evolution progress before 1945 was controlled by a few of designers who were from one design group. Therefore the campus form and the building style remained steady.
- c. The architecture style is **the Japanese Colonial Architectural Style** with the **Gothic Revival characteristics**. It is a kind of mixed architectural style.
- d. The campus planning based on the urban surrounding. There is an orthogonal relation between the campus’ main axis and the city main road.
- e. The Typical ‘回’ type plane form was also used in the Nanyuan campus. This feature shows the campus identity is a Japanese colonial architecture.
- f. The obviously common characteristic of each unit is that they had a gradually enclosed evolution progress, from relative open to relative close.
- g. The ‘zoning system planning’ method was used for the campus planning. Accordingly, the ‘fishbone style’ axis system was appeared in the campus.

## 3.5 Analysis the Relationship between Campus planning and Urban Planning

### 3.5.1 Dalian Urban Sprawl and Campus Location

In the chapter 1, there is a brief introduction of the Dalian city history and its memorabilia. Take it as a background, this research will give an analysis of the relationship between the Nanyuan campus and the Dalian city. In the beginning, based on the historical maps and planning documents of Dalian city, the details of urban development and the interactional relationship between the Nanyuan campus and the city development is given in the Figure 3-30.

There is a Dalian city map (actually it is a planning paper) of 1900 that was finished by Skolimowski<sup>86</sup> in May of 1900, named ‘青泥窪平面図’, in the document of ‘The First Ten Years history of the South Manchuria Railway Company’ (南満洲鉄道株式会社十年史, 1919). According to this map and other studies<sup>87</sup>, it can be determined that the planning range of Dalian downtown range was in the east of the Xiqingniwa river (西青泥窪河), the west of the Darigou (大日溝) and the north of the Nanshan (南山). In this map, in addition to the planning of the urban region for living, the most striking figure is a lager and imposing commercial port was planed in the coastal area, which indicated the property and the function of Dalian city.

According to the Dalian map ‘大連市街図’ in 1906 by the KANTOCHU MINSEISHO (関東州民政署) and other historical records by the SMR.CO., It is can be deemed that in the first year of Dalian was colonized by the Japanese colonist, the build up area of the Dalian city was only limited to the blue shadow as the analysis graphic in 1906 is shown. The detail is until to this year, there was some important infrastructures which were constructed. They are, the first phase of the Dalian Port project and its connecting railway lines that were constructed in 1902, the whole administrative district (行政区) and half of the western district (欧美人区) that were constructed in 1905. In addition, the campus of the Russia Business School, which was located at the edge of the Downtown area in 1903, was renewed as the headquarters of the SRM. Co. (満鉄本社) after 1908. Out of the downtown area, the site that for the Nanyuan campus in 1912 was used for the military camp in this period. Through the interviews<sup>88</sup> with Nishizawa Yasihiko (西沢泰彦), the detail that this district, the Fushimi-dai (伏見台) zone was managed and developed by the SRM. Co. after 1906 has been identified.



Analysis the RelationShip between Campus Planning and Urban Sprawl, around 1900

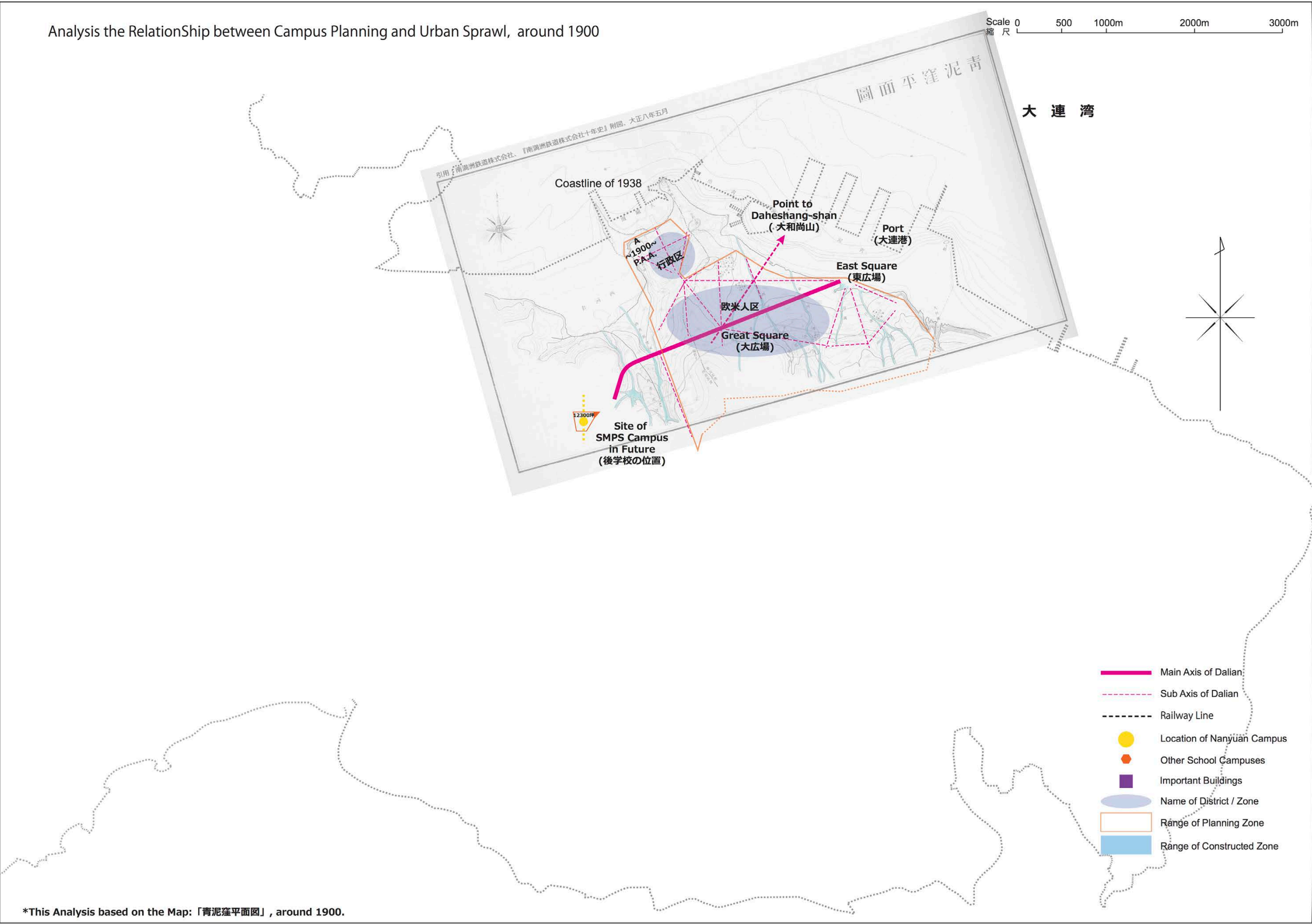


Figure 3-30-1 Analysis the Relationship between Campus Planning and Urban Sprawl

# Analysis the Relationship between Campus Planning and Urban Sprawl, 1906

Scale 0 500 1000m 2000m 3000m  
縮尺

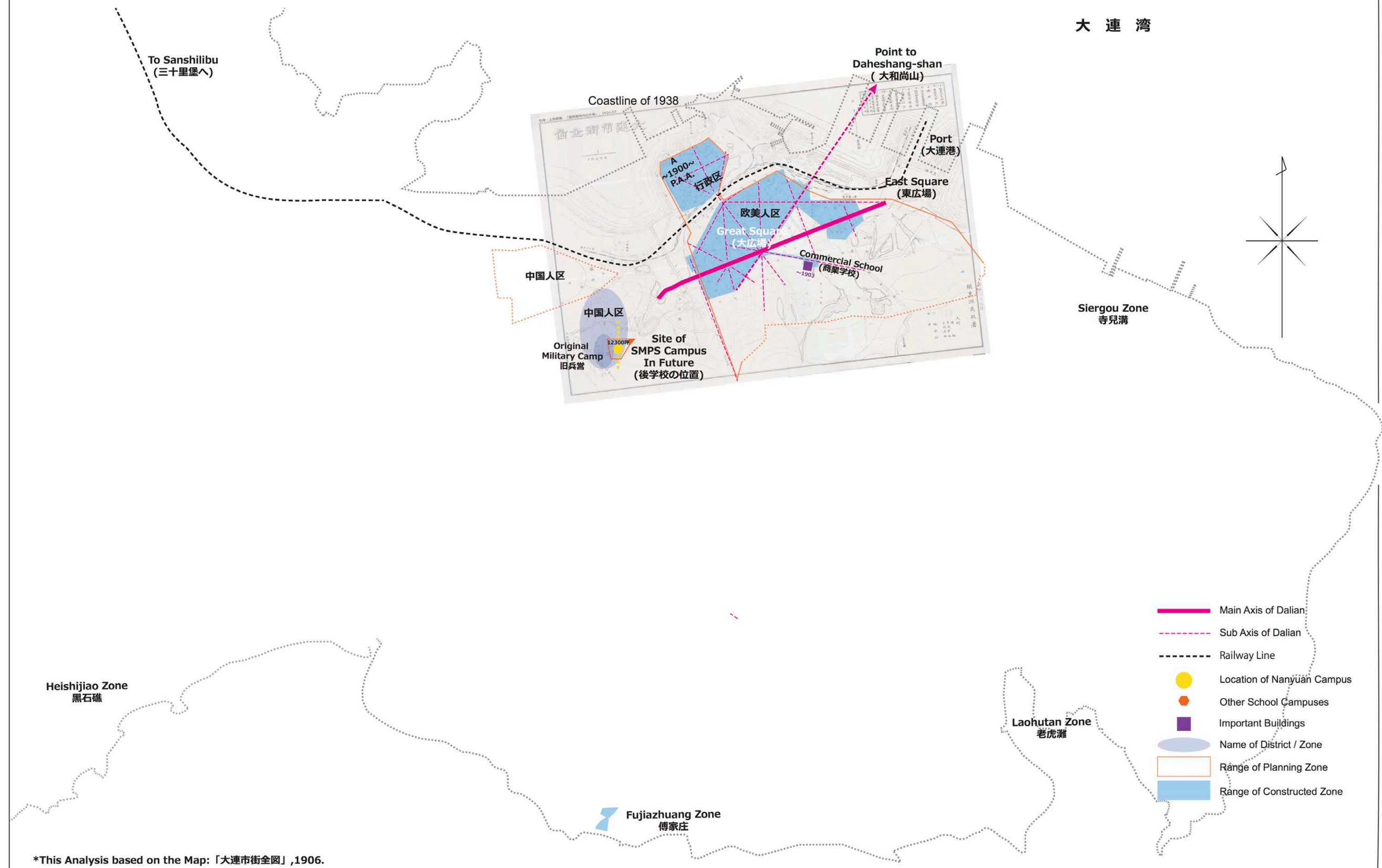


Figure 3-30-2 Analysis the Relationship between Campus Planning and Urban Sprawl



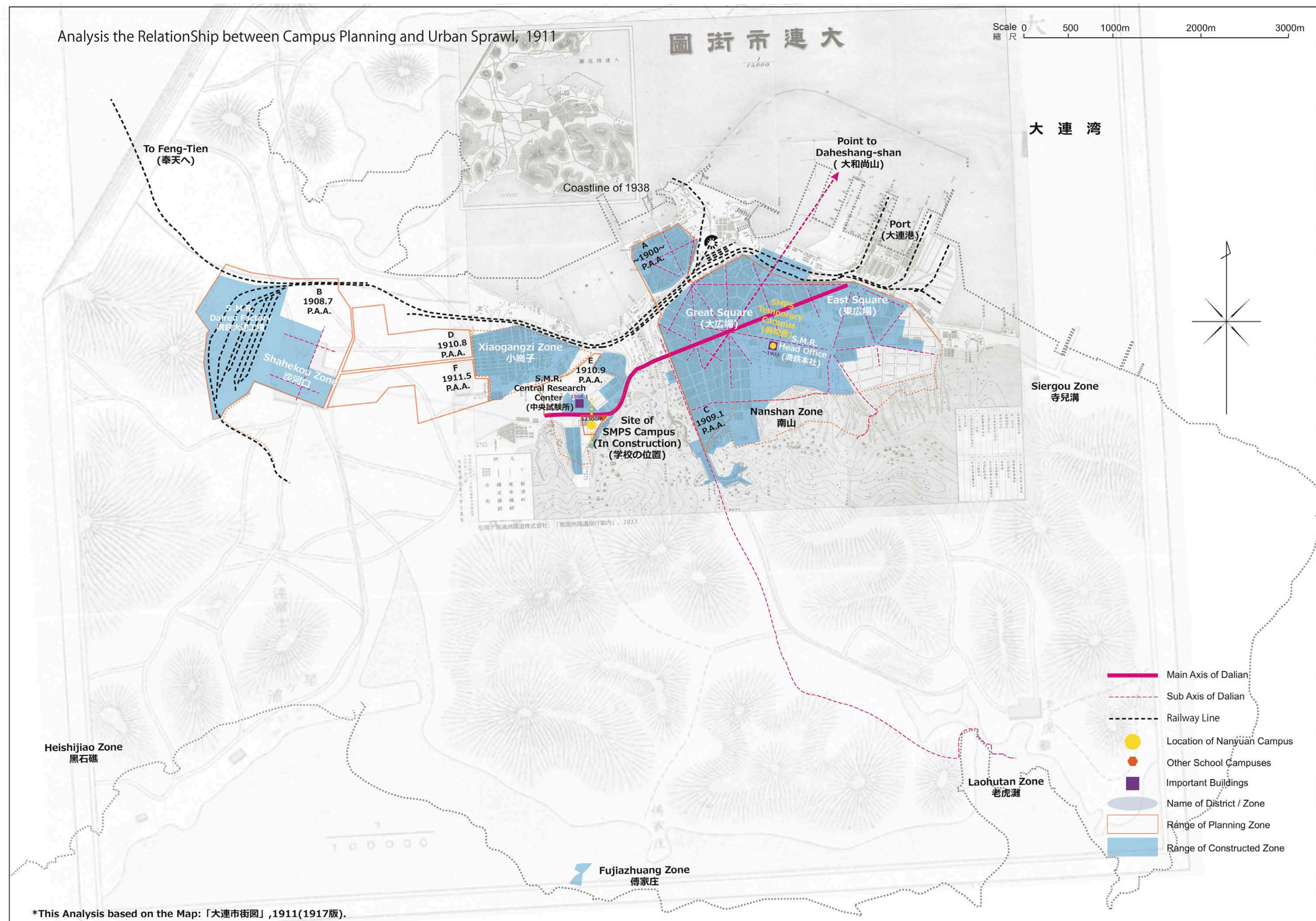


Figure 3-30-3 Analysis the Relationship between Campus Planning and Urban Sprawl



Analysis the RelationShip between Campus Planning and Urban Sprawl, 1922

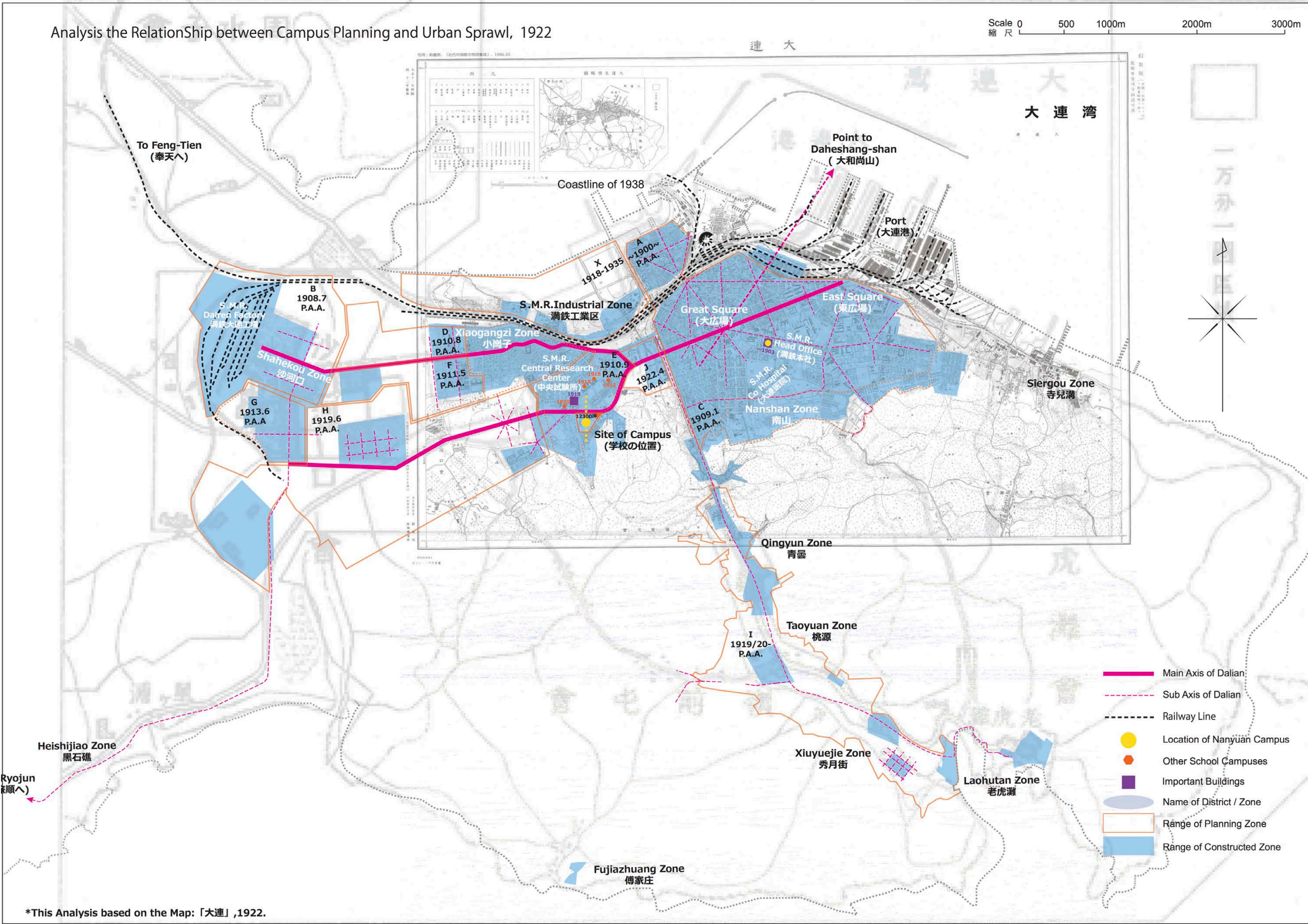


Figure 3-30-4 Analysis the Relationship between Campus Planning and Urban Sprawl



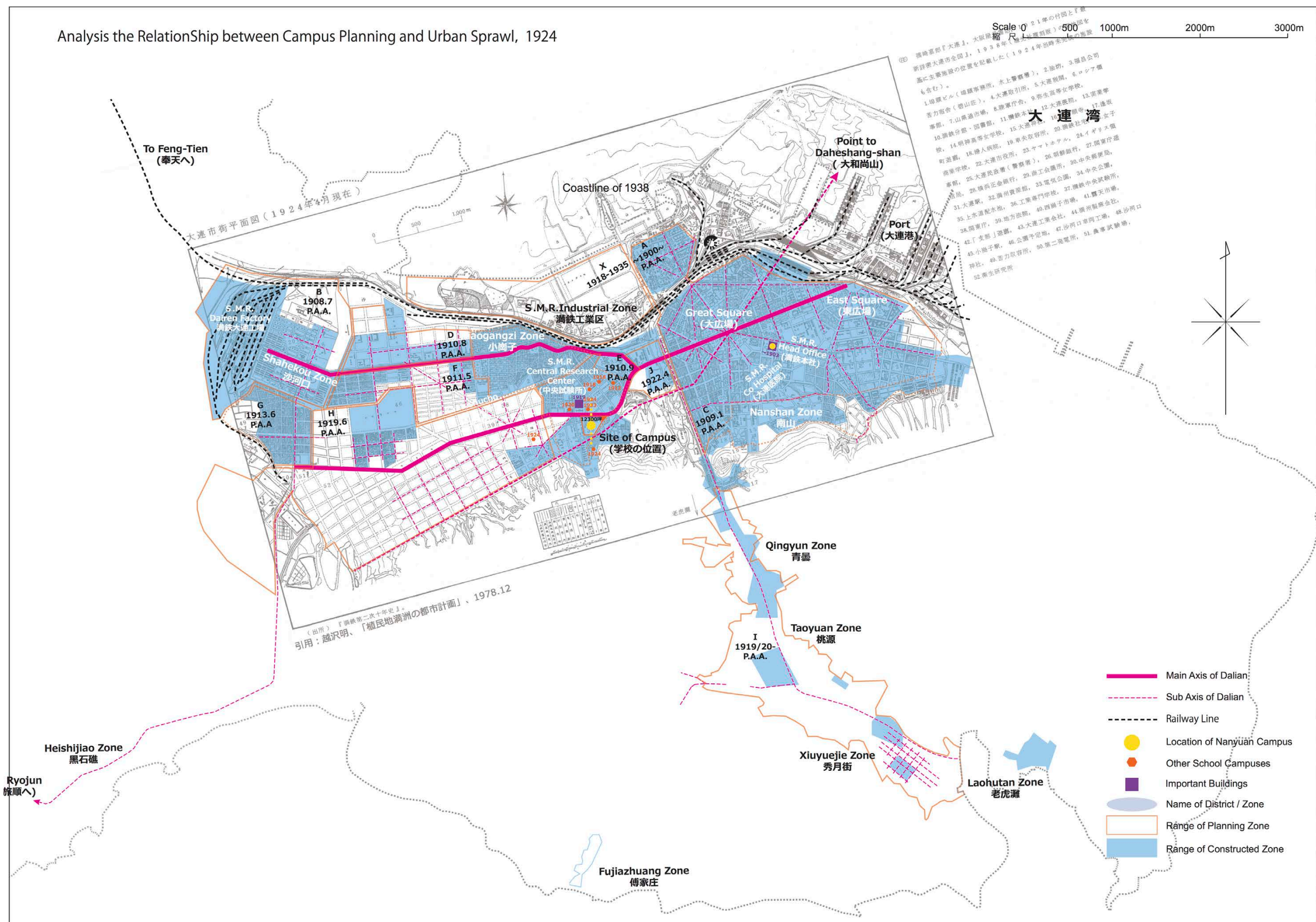


Figure 3-30-5 Analysis the Relationship between Campus Planning and Urban Sprawl



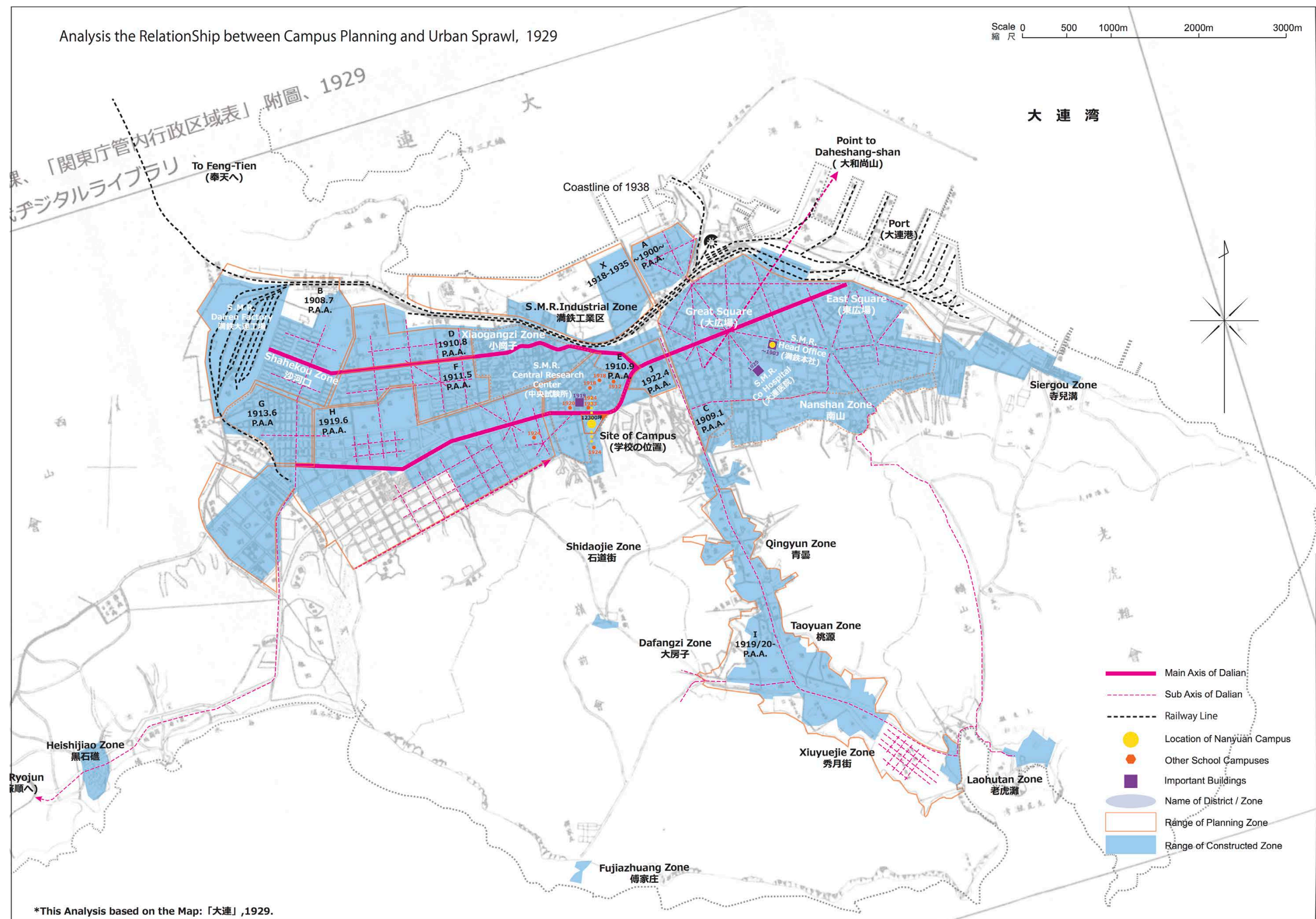


Figure 3-30-6 Analysis the Relationship between Campus Planning and Urban Sprawl





147



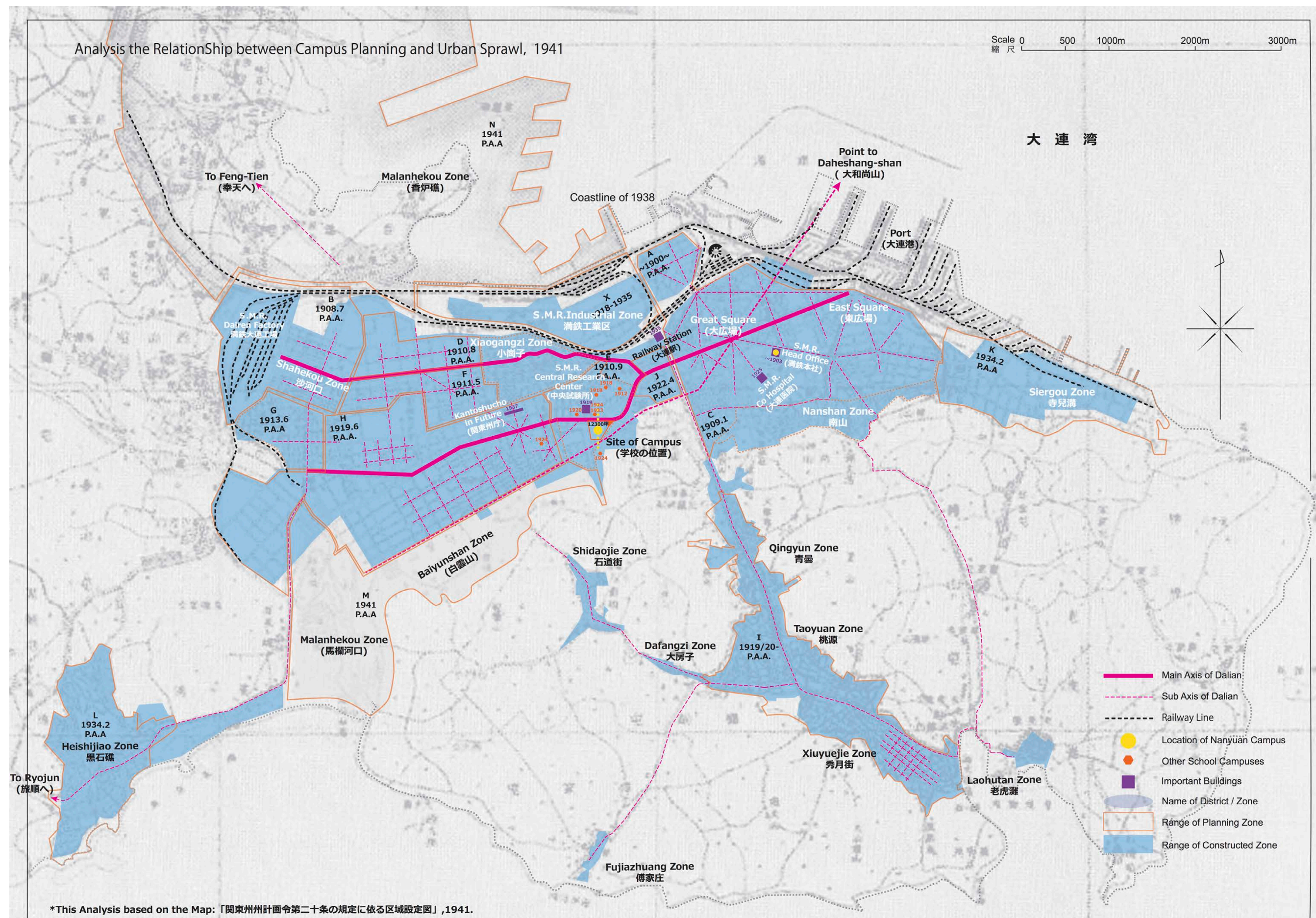
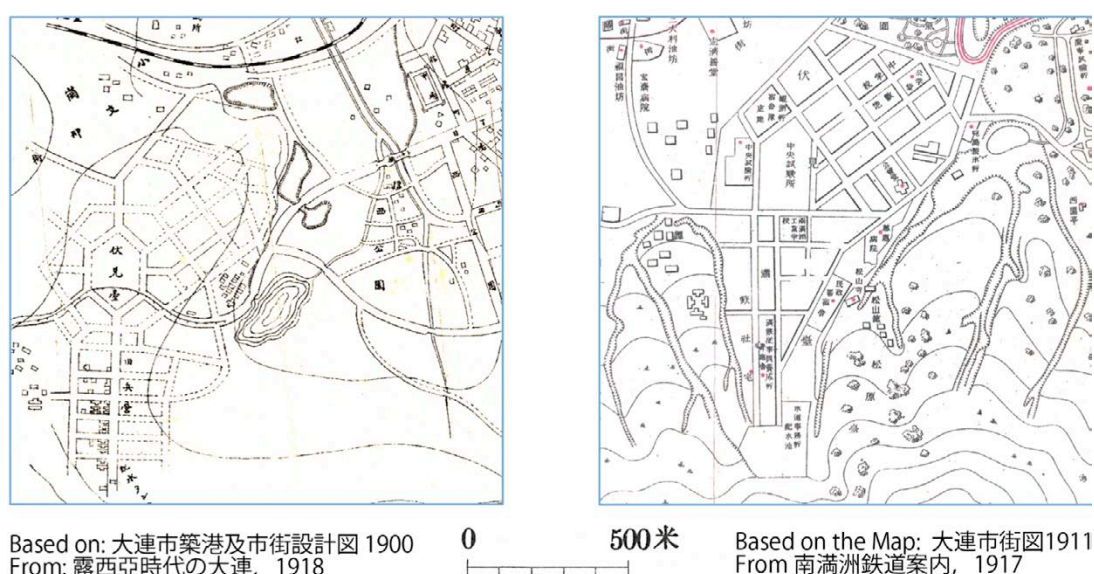


Figure 3-30-8 Analysis the Relationship between Campus Planning and Urban Sprawl



In January 1909, the first Japanese urban planning of Dalian city planned by Kuratsuka Yoshio (倉塚良夫) and Maeda Shouin (前田松韻) was published. This urban planning was followed the former version that finished by the Russian colonist in 1900, while the Nanshan area (南山麓) and the Siergou area (寺儿沟) included to the downtown area. It is worth noting that the western boundary of the city was still at the Xiqingniwa river (西青泥窪河) until 1909, that means the Fushimi-dai (伏見台) zone and the self-development Xiaogangzi (小岡子) zone located away from the downtown area.

A continuous planning for the Fushimi-dai zone was published in September 1910. It totally changed the original planning of this area in 1900, the new planning planed here as a residential district of Dalian city as the suburb area (Figure 3-31). Meanwhile, the Fushimi-dai zone developed to the western end of the Fushimi-machi (伏見町), which was part of the urban development main axis (shown as the Red line in the analysis graphic of 1911) at that time. According to the Dalian map of 1911, 大連市街図, which was published in 1917, it can be identified that the construction of the downtown area was almost completed, only a part of the Nanshan zone (南山) was still undeveloped. Meanwhile, away from the downtown, the Chinese living zone, Xiaogangzi (小岡子) zone was built up too. Whereas, the development of the Fushimi-dai was just begun, there are only some residential buildings which were constructed for the staffs of the SMR. Co. In this map, the entire campus name was added in the 1917 when it was published. In brief, during this period the property of the Fushimi-dai zone have not been fully reflected yet.

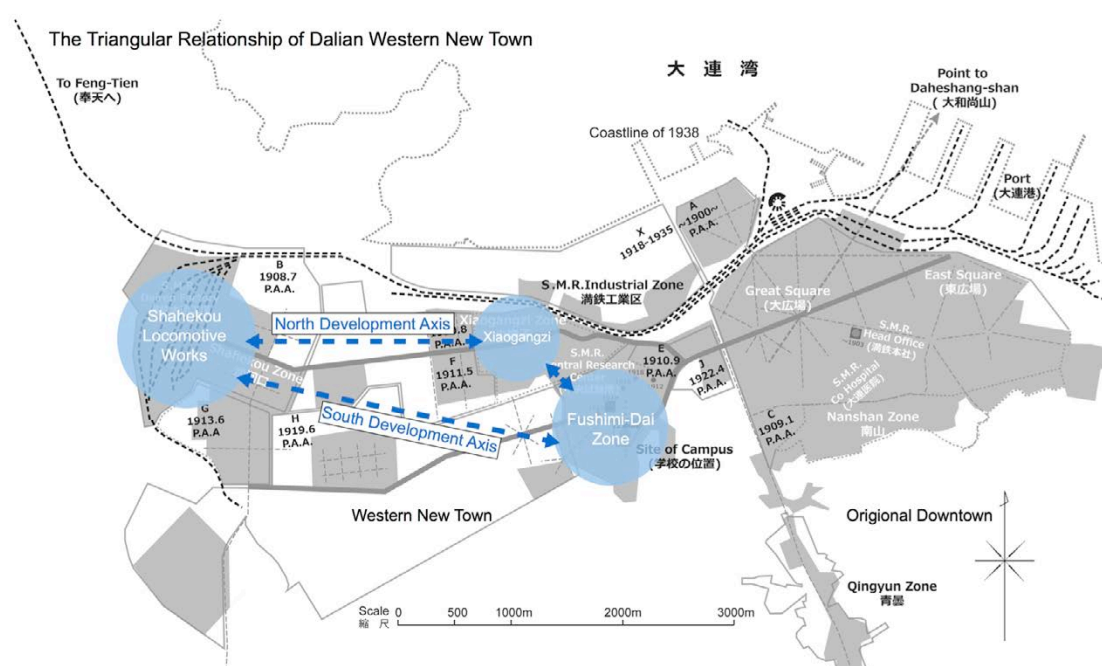


**Figure 3-31 The Fushimi-Dai Zone Planning in 1900 &1911**

In addition, there are two details which should be attention. Firstly, the tram network had been developed into three lines during 1908/9~1911. The first line was from the Dalian Port to The Fushimi-dai zone. the second line was from the Dalian Port to the Shahekou Locomotive works (大連沙河口満鉄工場), through the xiaogangzi (小岡子) zone. the last one was from the Changpanqiao (常盤橋) to the Laohutan resort (老虎灘) away from the downtown in the south. Among of them, the end of the first tram line was in the front of the Nanyuan campus site, also, in the front of the Central Research Center (満鉄中央試験所) where located in the opposite; Secondly, the site choose for the Shahekou Locomotive works (大連沙河口満鉄工場). The location was decided by the Goto Shinpei (後藤新平) who was the chairman of the SMR. Co. in July 1908. The site, Named Bei-shahekou (北沙河口), was remote rural area where only a few of Chinese farmers lived, the surrounding full of sorghum fields at that time. There was 5Km far away from the downtown area. Although, there were still amount of land which could be used for this factory on the east of downtown area, but he still insisted on establishing the factory at the Bei-shahekou (北沙河口) zone. For the reason, it has been recorded in the paper of '創業当初の総裁の勢力'<sup>89</sup> (上田恭輔, 1937): 'If this 300,000 or 400,000 Pyeong (坪) large factory is located in the downtown area, it will hinder the development of the Dalian city. Therefore, this factory has to move to the suburb area.' Due to his decision, Until to July of 1911, the factory was constructed completely and went to production. The more important thing is that caused by the factory established, it gradually changed to an importance influence element that encouraged the Dalian city expansion to the west after 1910<sup>90</sup>. As the continuous planning of the 1909 version, the D zone was planned in August 1910 and the F zone was planned in May 1911, as the analysis graphics is shown. This two zones just located between the factory and the Xiaogangzi (小岡子) zone. All of these four zones were composed to the North part of the Dalian new town.

Whit the time passed by, the new downtown boundary of the developing Dalian city was shown in the Dalian map, 大連, 1922 and 大連市街平面図, 1924 obviously. Compared with the map in 1911, the build up area of Dalian city, not only limited in the old range, for example the Nanshan zone, but also expanded to other two directions. One is that along the second tram line to the Laohutan resort (老虎灘), a residential belt was developed by the Dalian Koukai Tsuchi Kabushikikaisha (大連郊外土地株式会社)<sup>91</sup>. Another is that the urban expansion to the westward. Obviously, this expansion was not the one linear structure<sup>92</sup>, but a two linear structure development style, which like a kind of inward

radiation among the three 'bases'<sup>93</sup> that was shown as the development between the Xiaogangzi (小岡子) zone and the factory (大連沙河口満鉄工場) and the development between the Fushimi-dai (伏見台) and the factory. The Fushimi-dai zone should be emphasized that it already developed into a part of downtown area after the south Manchuria Polytechnic School was established. In addition, as the westward extension of the Fushimi-machi, it changed to the main developmental axis of the south part of Dalian new town. Therefore, the Fushimi-dai zone was an area of the western development and the 'bridgehead' of opening to the west of Dalian city. Especially for the H zone that planned in June 1919 (Figure 3-32).



**Figure 3-32 The Transition Relationship of Dalian Western New Town**

Until to 1929, except the far-end on the southwest, the most part of the Dalian new town were constructed under the influence of the simulative relationship among the three 'bases'. Hence, The 'Y-shaped' developmental frame appeared. Even more, the Fushimi-dai zone, where the Nanyuan campus located, changed into a kind of geographical central of the Dalian downtown.

Started from 1934, the new urban planning of the Dalian city was begun. The Siergou (寺兒溝) zone and the Heishijiao (黑石礁) zone, as the new parts, were added to the downtown range. According to the Dalian map, 大連市街図用途別現況図, in 1935 and the analysis graphics of 1935, the X zone that was a industrial zone for the SMR. Co., the I zone that was a residential zone developed by the Dalian Koukai Tsuchi Kabushikikaisha and the K zone (寺兒溝) that was

an industrial & warehousing zone were almost constructed. In contrary, the L zone (黑石礁) on the southwest was still developing.

The last urban planning of the Dalian city in the Japanese colony period was planned in the year of 1941. This planning was focused on the establishment of the urban development framework. Coordinately plan the whole urban region, not only for city area but also for rural area, as the planning ideology was confirmed too. Actually, after the 1934 version planning, a rapid but disorder expansion was begun in Dalian area. The urban spread was so fast that lots of so-called 'new urban areas' appeared at the edge of the downtown, due to lack of planning control. During this period, the Dalian port expansion work and the Ganjingzi (甘井子) Industrial zone's reclamation work were in full swing, but in contrast, the developmental and constructional work for the downtown area crunched to a standstill. For the reason, It was just because the planning committee only focused on the planning of the downtown area before, but forget the coordinate planning for the industrial zone and other areas, thus caused a certain degree of the imbalanced developmental phenomenon.

Therefore, in the 1941 version plan, a coordinate planning was planed for each kind of land use, such as the industrial land, the port land, transportation land and others, to control the unban development in rebalance<sup>94</sup>. Through this planning, as the analysis graphics of 1935 is shown, the M zone (馬欄河口) and the N zone (香爐礁) as the new member were added to the plan region. In brief, as the plan was fully considered all the elements of The Dalian city, such as the urban framework, the current situation of the land use at that time and the requirements for future needs, so this plan was affected to the Dalian urban development in a long time. Until to the 1990s, the development of Dalian city, or the urbanization area, did not beyond the city range that determined in 1941<sup>95</sup>.

With the urban development, the relative position of the Nanyuan campus was changed too. This transition progress is shown in the Figure 3-33, based the comparative analyzed the Dalian maps in 1911, 1922 and 1935. The new built areas is shown as the light blue shadow and the original areas is shown as the dark blue shadow. According to the analysis, it is obviously that the relative position of the Nanyuan campus, or the relative position of Fushimi-dai (伏見台) zone, in the Dalian city changed form the rural area where out of the downtown range to the suburb area where as a part of downtown, then to the geographical center of the downtown.



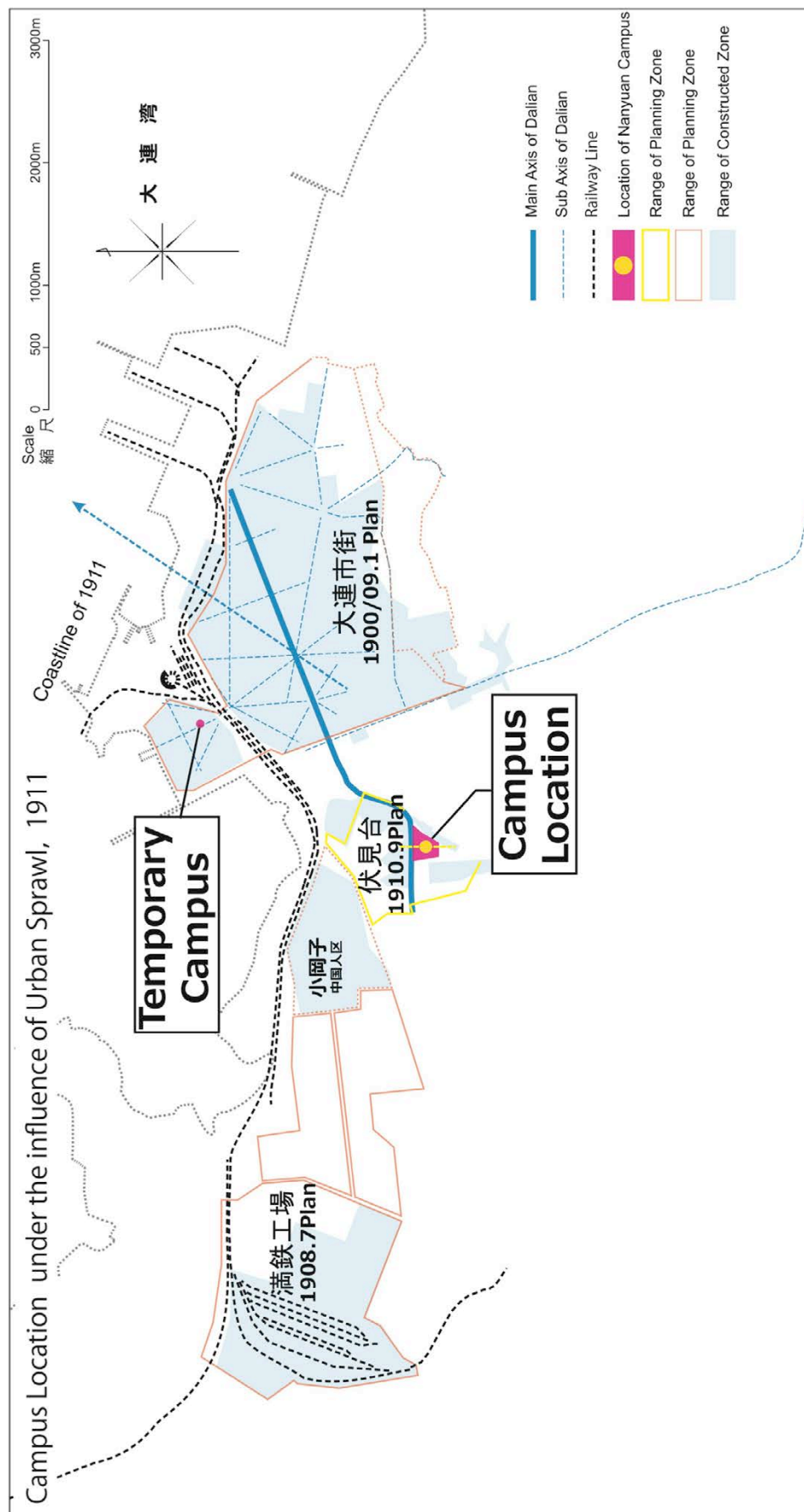


Figure 3-33-1 Campus Location under the influence of Urban Sprawl

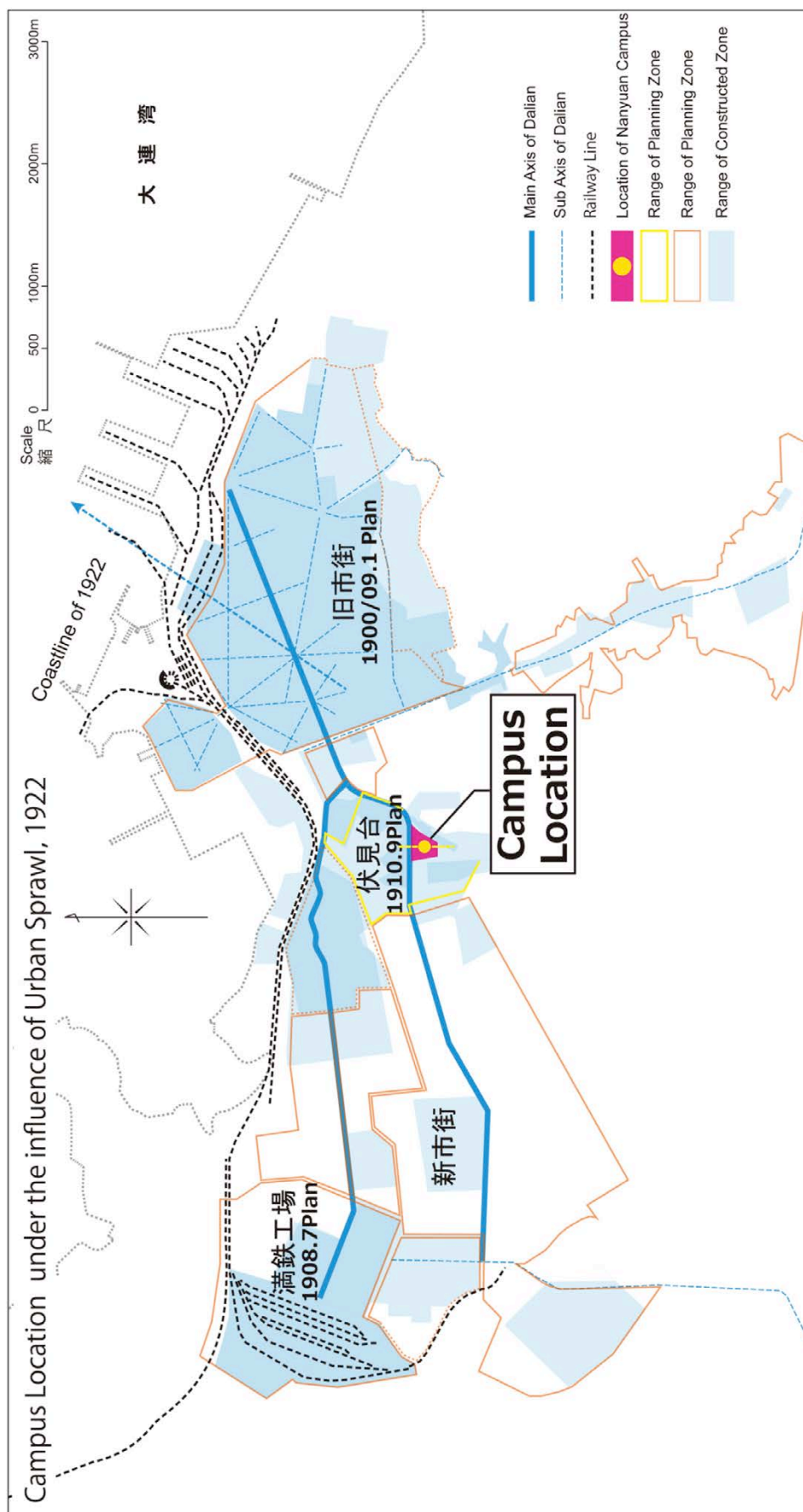


Figure 3-33-2 Campus Location under the influence of Urban Sprawl

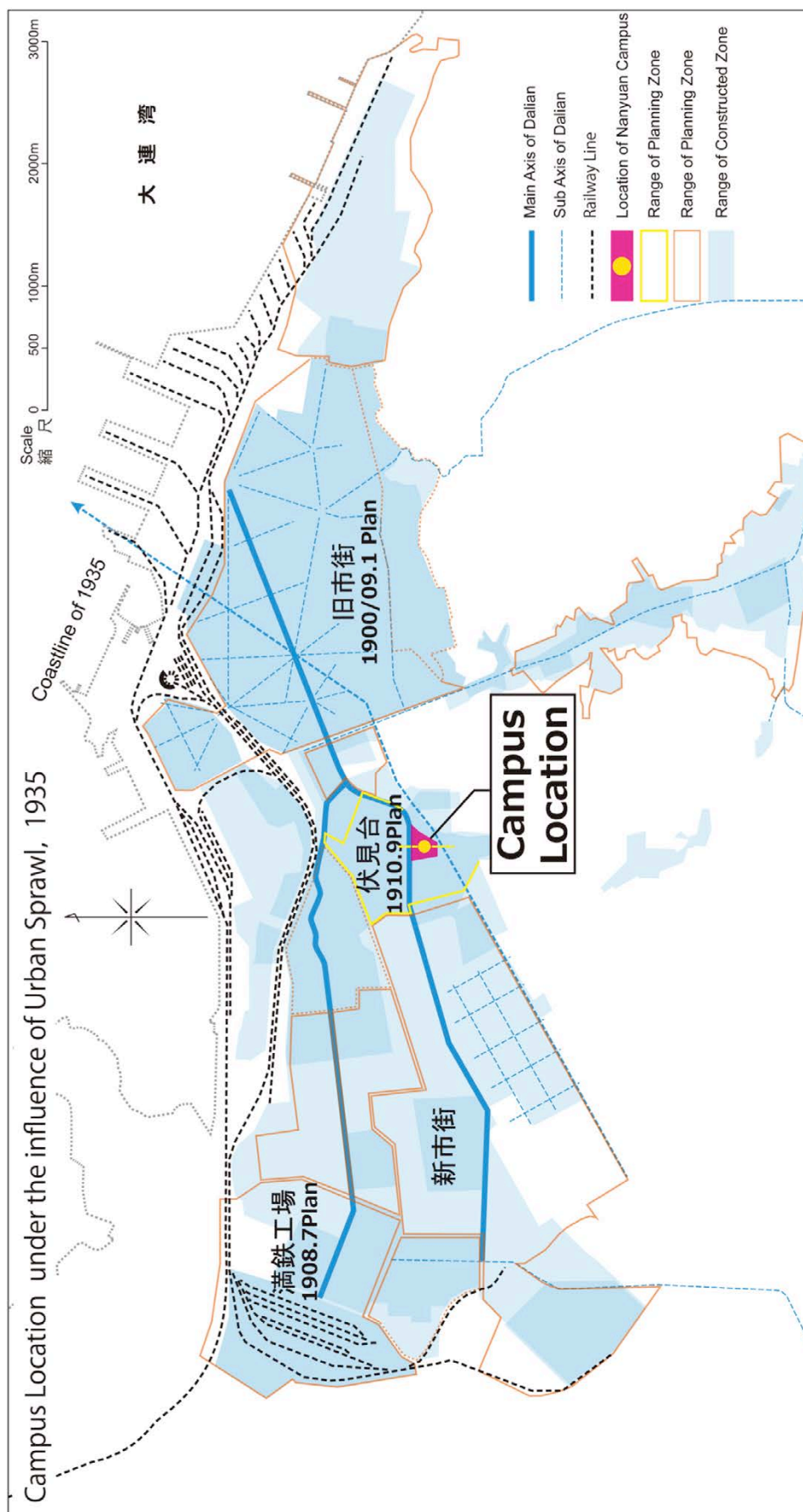


Figure 3-33-3 Campus Location under the influence of Urban Sprawl



### 3.5.2 Interaction progress of Campus and Fushimi-dai

Compare to the analysis the campus influence on the urban development in whole scale, the research would be better to identify the interaction relation between the campus and its urban surrounding, the Fushimi-dai (伏見台) zone. That is to analyze the urban surrounding affect on the campus and to analyze the campus affect on its urban surrounding. For the first one, urban surrounding to campus, has been discussed in above section, such as the choice of the campus axis system. In this section, will mainly focus on the analysis of the campus' influence on its urban surrounding. To get a clear summary, the Dalian Maps in 1906, 1911, 1915, 1922 and 1935 were chosen as the research objects. The result is shown as the Figure 3-34.

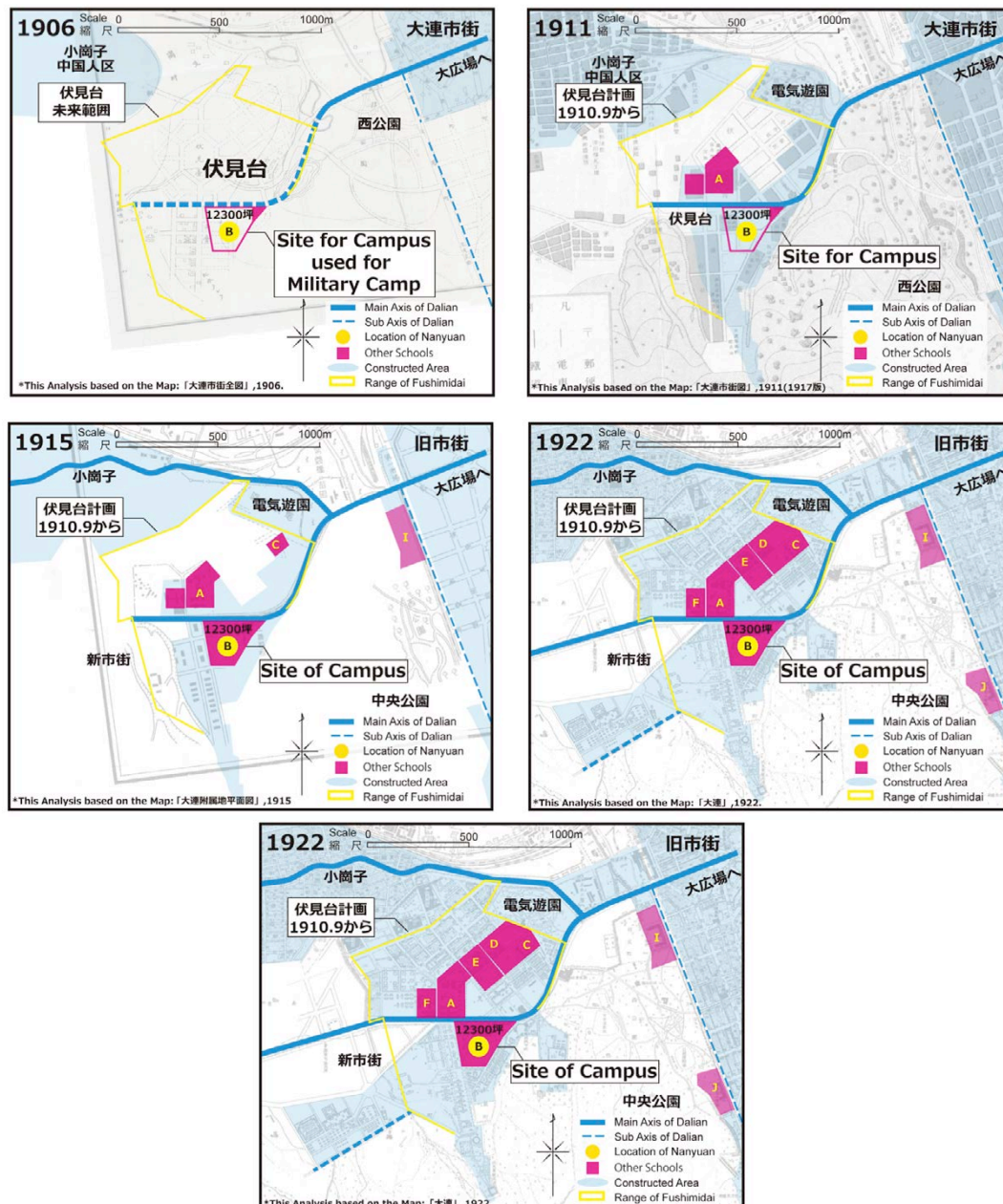
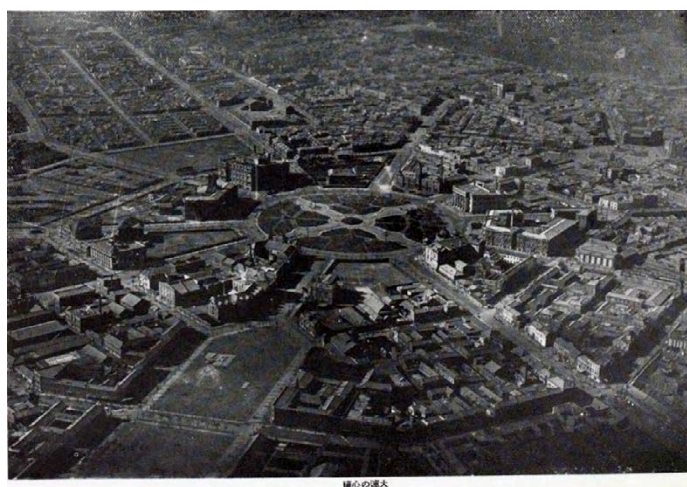


Figure 3-34 Interaction Progress of Campus and Fushimi-Dai Before 1945

As mentioned in above section, the Fushimi-dai area were planned to the Chinese zone in 1900 version planning, but up to the year of 1906, there is no infrastructure which was constructed. However, a military camp was built here after the Russo-Japanese War in 1905. Due to the Japanese police, for instead the functin of the Fushimi-dai (伏見台) zone, a new but no planning Chinese zone was gradually built-up in the Xiaogangzi (小岡子) zone (Figure 3-35) in 1905 on the north of it. From the map, the position of it is very easy to determine. The Fushimi-dai (伏見台) located on the west side of the under constructing downtown area (Figure 3-36)and the West Park, later was renamed the Central Park (Figure 3-37), was located in the middle between them. The north side was the Xiaogangzi (小岡子) zone and the west site was the space land that will used to the Dalian new town in future. On the south edge of it a water tank was constructed under the foot of the Green Hill (緑山), later this facility was renamed to the Suidou Jimusho Haisuichi (水道事務所配水池).



**Figure 3-35 Xiaogangzi in 1910**



**Figure 3-36 The Bird's Eye View of Dalian**

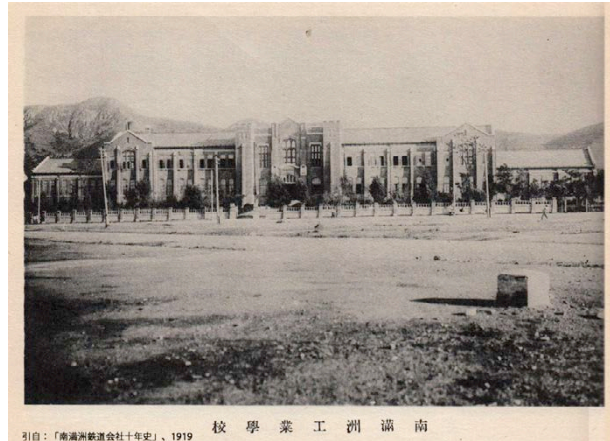


**Figure 3-37 The West Park**

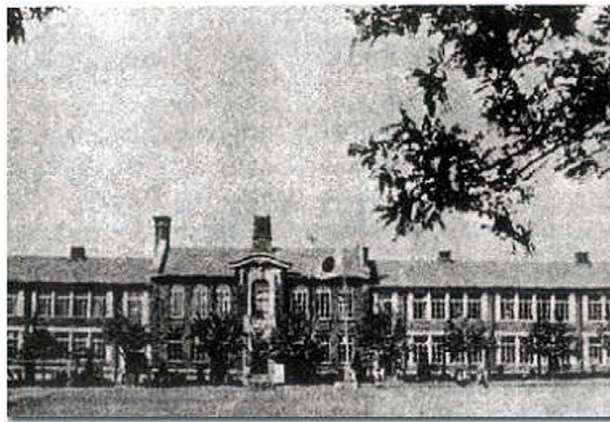
In the year of 1908, the SMR.Co. Central Research Center (満鉄中央試験所) was located here. Soon, some simple and crude buildings were constructed in the back side of the center site. Subsequently, some residential buildings and other official buildings of the SMR.Co. were constructed here too. According to the Dalian Map of 1911, it can be seen that the campus of the South Manchuria Polytechnic School was chosen here too, but the campus shape and area could not be conformed in the map. Other details can get from the map. And the campus of The Dalian Kougakudo (大連公学堂) was under construction near the Electric Pleasure Garden (電気遊園) in the east here.

Until to 1915, the initial project of the Nanyuan campus was construction completed. It located the in the center of the zone at the south side of the Fishimi-machi (伏見町) road, faced to the Central Research Center (満鉄中央試験所). The important point which should be emphasized is that only some low buildings in the site of the Central Research Center (中央試験所), therefore, as the highest building, the main building (本館) of the Nanyuan campus was the most striking and grand building in this area (Figure 3-38). at the east edge the campus of the Dalian Kougakudo (大連公学堂) (Figure 3-39) was constructed too. Although, in 1915 the zone was divided to a part of urban area and there were some important infrastructures that were established, it was still as an isolate island away from the downtown area.





**Figure 3-38 The Buildings of Nanyuan**



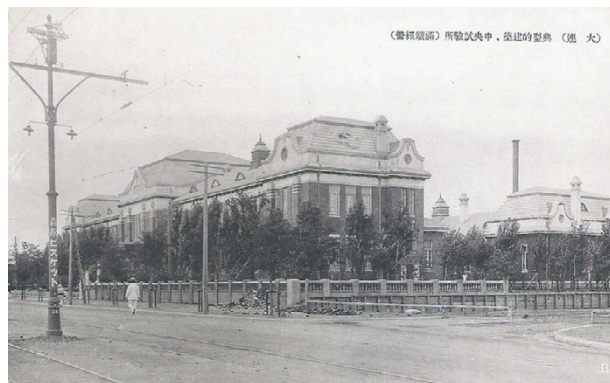
**Figure 3-39 The Dalian Fushimi-dai primary school**

This situation was changed in the next years by the urban development. To the year of 1922, the urbanization progress of the Fushimi-dai zone was almost completed. The east side has been connected with the original downtown and the north side has been joined unbrokenly with the Xiaogangzi (小岡子) zone. That means that the Fushimi-dai zone was developed into the southwest side of the Dalian downtown. In addition, there was an outward extending trend appeared at the west side of the zone. More importantly, several of schools were located in the zone. They were the Dalian No.1 high school (Shown in Figure 2-3) that constructed in 1918, the Dalian Fushimi-dai primary school (Figure 3-40) that moved in 1918 and the Nanmankou Fusetsukougyoujitsumugakkou (南滿工附設工業実務学校) (Figure 3-41) that moved in the original buildings of the Dyeing Factory of the Central Research Center (滿鉄中央試験所) in 1920. Moreover, the main building of the Central Research Center (滿鉄中央試験所) (Figure 3-42) was constructed in 1919 too. It is obvious in the analysis graphics of 1922 that a **teaching and research land-use belt** appeared. Surrounding it was the residential buildings, due to this area was planned as a residential

land-use in September 1910.



**Figure 3-40 The Nanmankou Fusetsukougyoujitsumugakkou**



**Figure 3-41 The Main Building of the Central Research Center**



**Figure 3-42 View of the Shahekou Locomotive Works**

This trend was continued in the next years. In the year of 1924, the campus of Dalian Business School(大連商業学校) was constructed at the Momiji-machi (紅葉町) on the south side of the Nanyuan campus. In the same year, the campus of the Dalian foreigner Language School (大連外国語学校) was constructed in the opposite of the Nanyuan campus. But later, the building was burned down by a fire disaster in 1930. Then, a new building was constructed on the site in 1933,

and used for the Dalian foreigner Language School (大連外国語学校) and the Dalian Hagoromo Women's High School (大連羽衣女子学校). Hereto, the obvious and successive **teaching and research land-use belt** was established in the center of the Fushimi-dai (伏見台) zone. Moreover, there were other three schools which were established around the zone during this period, as the analysis graphics of 1935 was shown.

Therefore, as a conclusion, the research deemed that the Fushimi-dai (伏見台) zone had become a key educational district of Dalian city.

### 3.5.3 Summary

Based on the analysis above, there are two conclusions summarized:

- a. The Nanyuan campus could be deemed a main influencing factor of Dalian urban development.
- b. Since the establishment of the South Manchuria Industrial School, other schools were attracted by its surrounding. Therefore, the Fushimi-dai (伏見台) was developed to a key educational district of Dalian city.

### 3.6 Summary

It is incredible that the Nanyuan campus architecture style and planning ideology had not been changed during the 34 years continuous construction, as the original campus of the South Manchuria Polytechnic School and the South Manchuria Industrial School before 1945. Definitely, Yokoi Kensuke (横井謙介) and Oka Oji (岡大路) as the main designer, who graduated from the same Tokyo Imperial University and worked in the same MANTETSU KENCHIKUKA (満鉄建築課), had played a important role during that period. Whereas, the opinion or the comment from the leader group of the decision-making level who charged campus construction should be the most important factor for the style of the campus which remained steadily. The person who gave the promise to maintain the style and ology, was the director group of the SMR.Co., was the dean of the school or the leader of the MANTETSU KENCHIKUKA (満鉄建築課)? Actually, the answer has been unable to get from the historical documents yet, because no one had been recorded it in the documents. But no matter who affirmed the principle of the campus planning ideology, for the campus, the left to itself was the unified and harmonious evolutionary progress of the campus: The Gothic Revival features, Plan based on the urban surrounding, the clear zoning system and axis system and evolution in intensive style.

Discuss about the relationship between the campus and its urban it is suggested that surrounding, the research deemed that the Nanyuan campus has encouraged and gave a positive affection on the Fushimi-dai (伏見台) zone's urbanization progress. At least in the aspect of led the zone developed to the educational district. In the evolutionary progress, the phenomenon of the school gathered gradually should be considered as a non-policy and spontaneous change, due to there was no clear mention of use the zone as the education district in the all of planning documents that issued by the Japanese colonial government. Based on a research conclusion by Koshizawa Akira (越沢明, 1984) that is only the north side of the Fushimi-dai zone was planned in 1910 by the KANTO TOTOKUFU (関東都督府), this research hypothesized that did the Fushimi-dai zone where so many facility of the SRM.Co. planned by the MANTETSU KENCHIKUKA (満鉄建築課) were located too<sup>96</sup>? Just like the case of the Shahekou Locomotive works (大連沙河口満鉄工場) zone was planned by the MANTETSU KENCHIKUKA (満鉄建築課) in 1908<sup>97</sup>. If the hypothesis is correct and valid, then the urban planning pattern that depended on a higher educational institution to establish an educational district and to encourage the urban development maybe also was used to established other cities by the

MANTETSU KENCHIKUKA (滿鉄建築課). Therefore, in order to verify the hypothesis, the research will give a continuous study on the comparative case, the Campus of the Manchuria Medicine College and its located city, Fengtian (奉天) that is named Shengyan in Nowadays.

