Chapter 4

Analysis Comparative Sites which were Established at the Same Location in the Same Period

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

As explained in the first chapter of this thesis, in the early time for colonists in Manchuria and Kwantung Leased Territory, the higher education institutions they established only included 3 schools, namely, South Manchuria Industrial School (南満洲工業学校), Ryojun College of Engineering (旅順工科大学) and Manchuria Medical College (満洲医科大学). In the mid-to-late period of the Japanese colonial, several other colleges and universities had been established in the Kwantung Leased Territory or other SMR. Co. Zones. For example, Japan-Russia Association School[98] (日露協会学校) in Harbin, Manchuria Normal School[99] (満洲教育専門学校) in Houten, and so on. Because of varieties of reasons, this research does not consider them as study objects.

In this research, the campus of the South Manchuria Industrial College and the city where it belong to were regarded as the main object of the study, meanwhile, the other two schools and cities will be the comparative site. The main reasons are:

First, Ryojun College of Engineering and South Manchuria Industrial School were both established inner the Kwantung Leased Territory, while Ryojun College of Engineering was established by the government the Kanto Totokufu (関東都督府) equivalent to the National University nowadays, which is totally different from the characteristic of South Manchuria Industrial School as private school. Based on this, the research of them will find out some common or different relationships between the campus and the development of the city within the background of the various characteristics of the schools in the same region, which also will be helpful to summarize the basic characteristics of campus located in the Kwantung Leased Territory.

Second, it will be more obvious factors and features selecting the Manchuria Medical College as a comparative example to prove the development mode and characteristics of the South Manchuria Industrial School. Manchuria Medical College was established in the Houten SMR. Co. Zone where was excluded the scope of the Kwantung Leased Territory. However, as the same situation with South Manchuria Industrial School, Manchuria Medical College was also a private institute of higher education established by the South Manchuria Railway Company in their own charged land. Therefore, this research suggests that it can be a good study to explore and analyze the theory and policy for constructing a higher education institute in Manchuria. In the other hand, since the urban environment of which the school involved in was relatively 'pure'[100] compared with Dalian, this research can also explore the attitude and the attached main purpose of the SMR. Co. when they selected the site for the campus. Therefore, this research chooses the two schools established in the early Japanese colonial period and their located urban environment as a comparative analysis.

4.2 From Lushun Industrial School to Lushun College of Technology

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

Ryojun College of Engineering (旅順工科大学) was located in the place where it is the port area of Dalian City, Liaoning Province, China, where was Ryojun city during the period of the Japanese Colony. This School was the highest level of governmental higher education institutions in Kwantung Leased Territory founded by the Kanto Totokufu (関東都督府) in that time. It was founded on 10 May 1909 as Ryojun Engineering School (旅順工科学堂), while on 31 March 1922, was upgraded to Ryojun College of Engineering. The first president was taken charge of by the president of the Kwantung District Executive, Shirani Dakeshi (関東都督府民政長官：白仁武).

The chronicle of events of the College is shown as the Table 4-1[101]

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

	Year	Important Information and Dates
旅順工科学堂時代	1908/11	The propose to establish the Ryojun Engineer School was proposed by Kanto Captaincy '大島義昌' and Premier '桂太郎' in the document named '旅順工科学堂創立書'.
	1909/5/8	The Budget of foundation the Ryojun Engineer School was passed in the 26th Imperial National Congress.
	1909/5/10	The '旅順工科学堂官制' published as the '勅令第133号'.
	1909/9/6	The '旅順工科学堂規則' published as the '関東都督府令第12号'. 4-years undergraduate course was set, included the majors of Mechanical Engineering, Electrical Engineering, Metallurgy and Mining Science.
	1910/4/21	The first enrollment
	1910/5/10	The Opening Ceremony was held.
	1910/6/20	'霊阳会', the alumni association of the School was established.
	1912/3	Student's dormitory was constructed at the south site of the campus
	1913/4	School anthem 'ダイナマイト節' was composed by 芳賀千代太,・河村頼 and 真島宏. .
	1913/12	Graduated the first graduate, meanwhile, the Alumni Association named '興亜技術同志会' was established.
	1916/3	The Preparatory (予備科) for Chinese was set up in '旅順高等公学堂'.
旅順工科大学时代	1922/3/31	The '旅順工科大学官制' published as the '勅令第160号'. The school upgrade to the Ryojun College of Engineering.
	1923/4	The College Preparatory was set up. The first session was enrolled on April 4th.
	1924/1	The '平和の鐘' was selected as the college anthem, composed by 久米孝一 and 信時潔。
	1924/4	Student's dormitory was named as '興亜寮'
	1924/11	The Cabinet council decided to abolish the Ryojun College of Engineering , be called '甲子学難' in history.
	1924/12	The petition of to continue to run on the College wrote by college preparatory Prof. Uchibori (内堀), was approved by the Japan imperial government.
	1926/2	The '附属工学専門部' was closed。
	1926/4	The 3-year course of the majors of Mechanical Engineering, Electrical Engineering, Metallurgy and Mining were set up. Meanwhile the '興亜寮' was used as the preparatory student's dorm. The undergraduate's ones were established in the downtown area.
	1927/9	The self-government policy was recognized to the '興亜寮'.
	1928/5/10	The 20th anniversary celebration of the college.
	1936/6	The department of Applied Chemistry was set up.
	1938/4	'附属臨時技術員養成所' was set up.
	1940/9	10 students of the '興亜寮' were dead due to the typhoid fever.
	1941/12	The length of schooling of the college was shortened due to the WW II.
	1942/4	'附属臨時技術員養成所' was closed, while '附属臨時教員養成所' was set up.
	1942/9	Two alumni associations, '霊阳会' and '興亜技術同志会', were combined to the '旅順工科大学同窓会'.
	1943/4	The length of schooling of the college preparatory was shortened to 2 years from 3 years.
	1945/4	The majors of chemistry and Physics were set up.
	1945/8/25	The last graduation ceremony was held for the college.
	1945/9/4	The '興亜寮' was occupied by the Soviet Red Army.
	1945/9/5	Soviet Red Army occupied the campus.
	1945/10/3	An evacuation order issued by the Japan government for the Japanese who lived in Ryojun.
	1945/10/25	Soviet Red Army formally issued an expulsion order
	1945/11/30	The Ryojun College of Engineering closed Officially.

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

The Campus site and buildings' evolution progress are shown as the Table 4-2: 「旅順工科大学変遷大事件一覧」[102].

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

年份		名前	建坪(m2)	注
旅順工科学堂時代	1909.05.10	旅順工科学堂官制発布	------	勅令 133 号
	1909.06.12	関東都督府民政長官白仁武学長に兼任	------	
	1909.09.06	旅順工科学堂規則制定	------	関東都督府令第 12 号
	1910．02	旅順工科学堂の位置が定める（旅順札幌町）	------	関東都督府令第 74 号
	1910．05	機械工学科機関室新築	715.47	竣工
	1910．12	採鉱冶金学科試金室新築	266.67	竣工 1913 年で演武場に改築
	1910．12	瓦斯工場及び実習工場汽罐室新築	374.67	竣工
	1911．04	機械工学科実習工場新築	2083.33	竣工
	1912．04	寄宿舎新築（東、中、西寮）と炊夫室	約 5493.67（北寮と光風閣がない）	竣工 北寮については竣工年不祥（でも 1923 年頃以前竣工した）
	1912．04	電気実験工場新築	1089.33	竣工 （後電気第二実験室に改称）
	1912．04	電気及び物理学教室	434.37	竣工
	1912．04	化学実験室新築	905.3	竣工 （後物理化学実験室に改称）
	1912	煖房室	274.30	竣工（年代推測）
	1912	警手室	13.63	竣工（年代推測）
	1913．01	光風閣新築	453	竣工
	1913．01	運動場地（演武場が改築、テニス場二ケ所、相撲場等）	------	竣工
	1913．02	機械工学科実験工場新築	1106.73	竣工 （後水力学実験室と応用力学実験室に改称）
	1913．03	化学、採鉱冶金学教室新築	721.47	竣工
	1913	採鉱冶金実験室新築	719.80	竣工 場所は元機械科実験工場（機関室）の南部分
	1916.03	中国人学生のために予科　（のちの予備科）　を設置		（旅順高等公学堂内）
	1917	無線電信所	236．67	竣工 （後無線通信実験室/周高波実験室分室に改称）
	1919.5	興亜記念碑	------	竣工
旅順工科大学時代	1922.03.31	旅順工科大学官制公布 旅順工科学堂を旅順工科大学附属工学専門部と改称し、在学生を収容	------	勅令 160 号
	1922.04.01	旅順工科大学が設立	------	関東都督府令第 18 号
	～1923～	北寮等	1259．96	竣工 年代不祥
	1924	昇格記念碑	------	竣工
	1926.02	附属工学専門部廃止		

年份		名前	建坪(m2)	注
	1926	研究室	355.00	竣工 (後応化実験室に改称)
	1926	倶楽部	324.00	仮設建物（後取り壊す）
	1926	予科教室	------	仮設建物（後取り壊す）
	1928	予科教室	680.31	竣工 后加建，时间不详
	1936	演武場改築	+ 229.69	改築竣工
	1937	新　瓦斯タンク	33.00	竣工
	1937	応化実験室増築	+ 246.67	竣工。元研究棟から改称
	1937	倉庫(本館西側)	80.00	竣工
	1938	附属養成所	600.00	竣工
	1939	本館増築と採鉱冶金実験室増築	+ 203.33	竣工

a. Transition and expansion of the campus site

During the establishment in 1909 to the shut in 1945, there was no records in the historical information about the change of the land use of the Ryojun College of Engineering. February 1910, based on the content of '関東都督府令第 12 号', the government authorized the Ryojun Engineering School with 68199 Tsubo (坪) teaching-land and 3707 Tsubo (坪) sports-land located in the west of the suburb of Ryojun New town (旅順新市街) as the school construction land-use. The detail number of the campus area showed up in the `関東都督府立旅順工科学堂一覧'[103] published in 1911, can also be found in the latest school history document published in 1939 named as '旅順工科大学一覧'[104]. According to records of these documents, this research suggests that the land area of the campus has not been changed.

b. New construction and remove of the buildings

In this study, according to historical documents of the school, this research recovered and retraced of the annual site plans diagram of the campus, showing in the Figure 4-1.

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

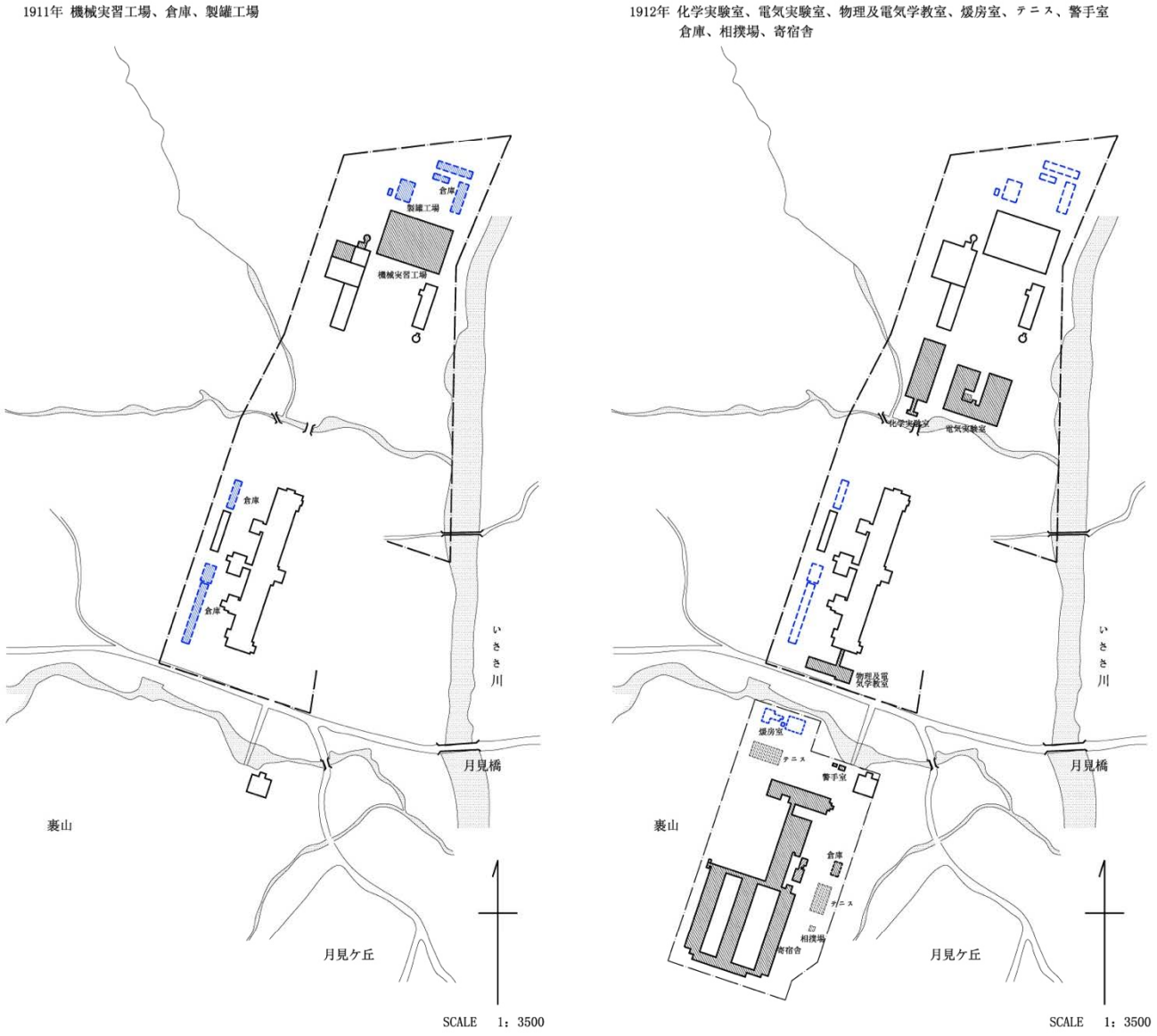


Figure 4-1-2 Retraced Campus Site plans of the RCE before 1945

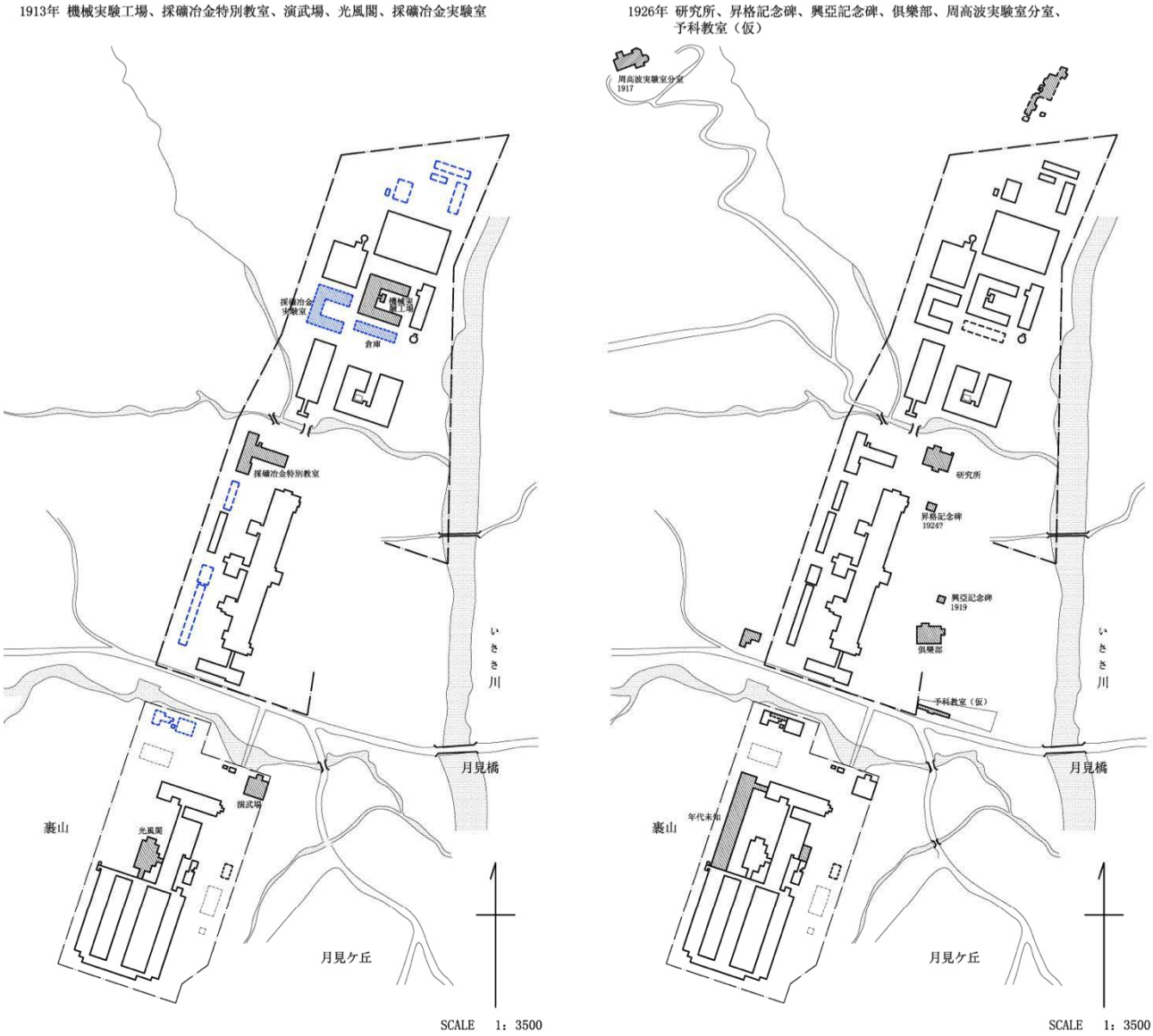


Figure 4-1-3 Retraced Campus Site plans of the RCE before 1945

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

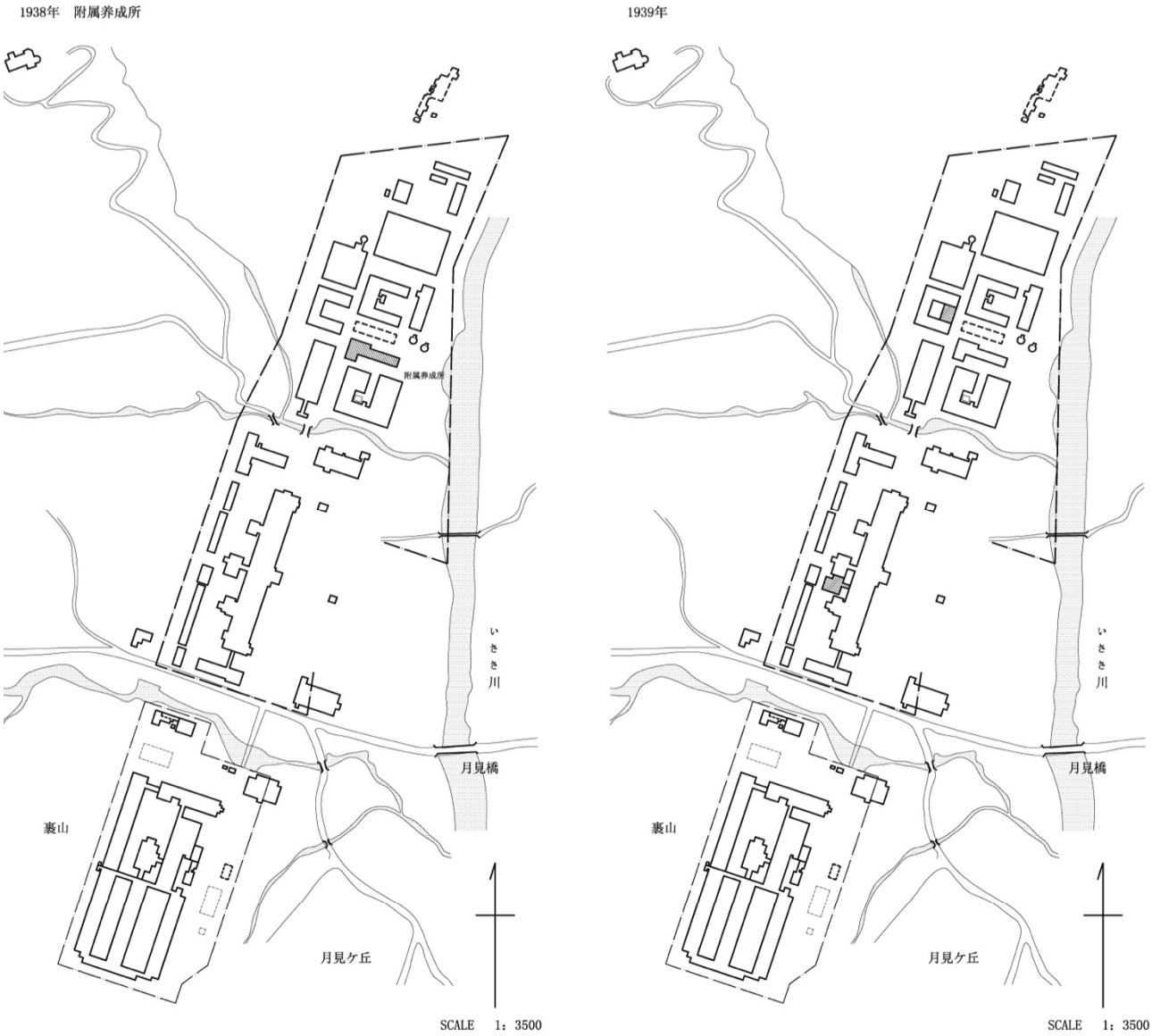


Figure 4-1-5 Retraced Campus Site plans of the RCE before 1945

There is an explicit record about the origin of the college main buildings in the school history record. In 1910, the school decided to select a site for the school located in the 203 Mountain (児霊山) foot, west to the Ryojun New town where used to be the campsite for the Russian Navy during the Russian Colony Period. In that site, a classical style and simply reconstructed building, with 3 storey built around 1900, was naturally being used as the college main building (Figure 4-2). In this way, it reduced the College construction amount, and made rational use of the existing facilities within the site. It can be obviously seen from the 'Campus Master Plane 1911' (Figure 4-3) that there were some teaching buildings already constructed. In addition to the main building and its backward warehouse, there had been already constructed some buildings such as the Heat Engine Laboratory of the Mechanical Engineering Discipline (機械工学科熱機関実験室) with the boiler room (汽缶室) that was partially torn down and rebuilt as the new Mining and Metallurgy Laboratory (採鉱冶金実験室) later, the Assaying Laboratory of the Mining & Metallurgy Discipline (採鉱冶金学科試金室) that was reused as the Enbujyo (演武場) (Figure 4-4) in 1913 and the gas plant and tank. Besides, it can be clearly seen that there was a reserved land used for dormitory construction on the south side of the school. At the beginning of the school, parts of the 3 stories in the main building were used as dormitory allocated with some beds and some other parts were used for study room. In 1911, with the entrance of lots of new students making the temporary dorm be too narrow, the president, Shirani Dakeshi (白仁武) commenced to find a new suitable land for dorm for the sake of the student's physical and mental development. In the progress of searching for a spacious land for dorm construction or some Russia residual buildings, due to the reason that the distance between suitable places and school were too long or the property rights could not be transferred, the school finally decided to change the south part in the campus site to be practice factory into dorm construction land. The practice factory was converted to the north side of the site and the construction completed in April 1911.

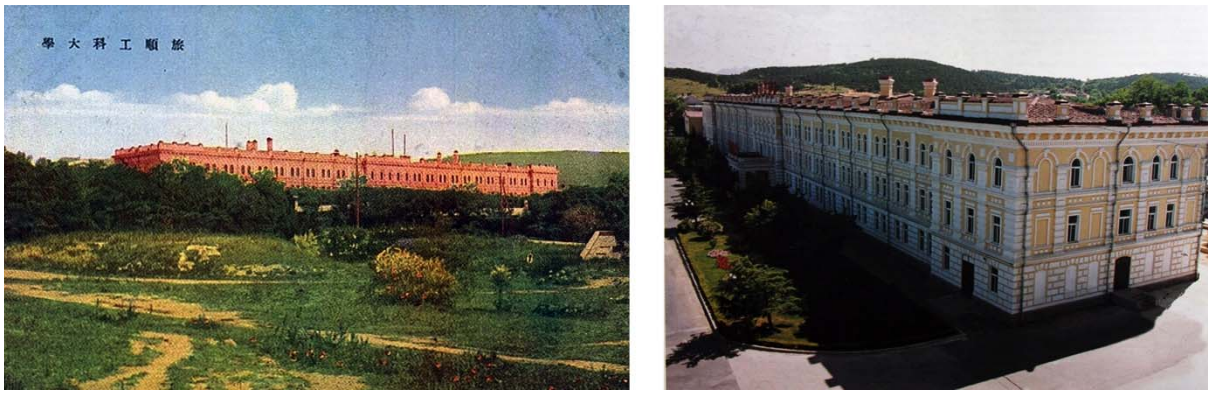


Figure 4-2 The Main Building of the Ryojun College of Engineering, Past and Present

引用：旅順工科学堂、「関東都督府立旅順工科学堂一覧」、明治四十三年十月（1910.10）

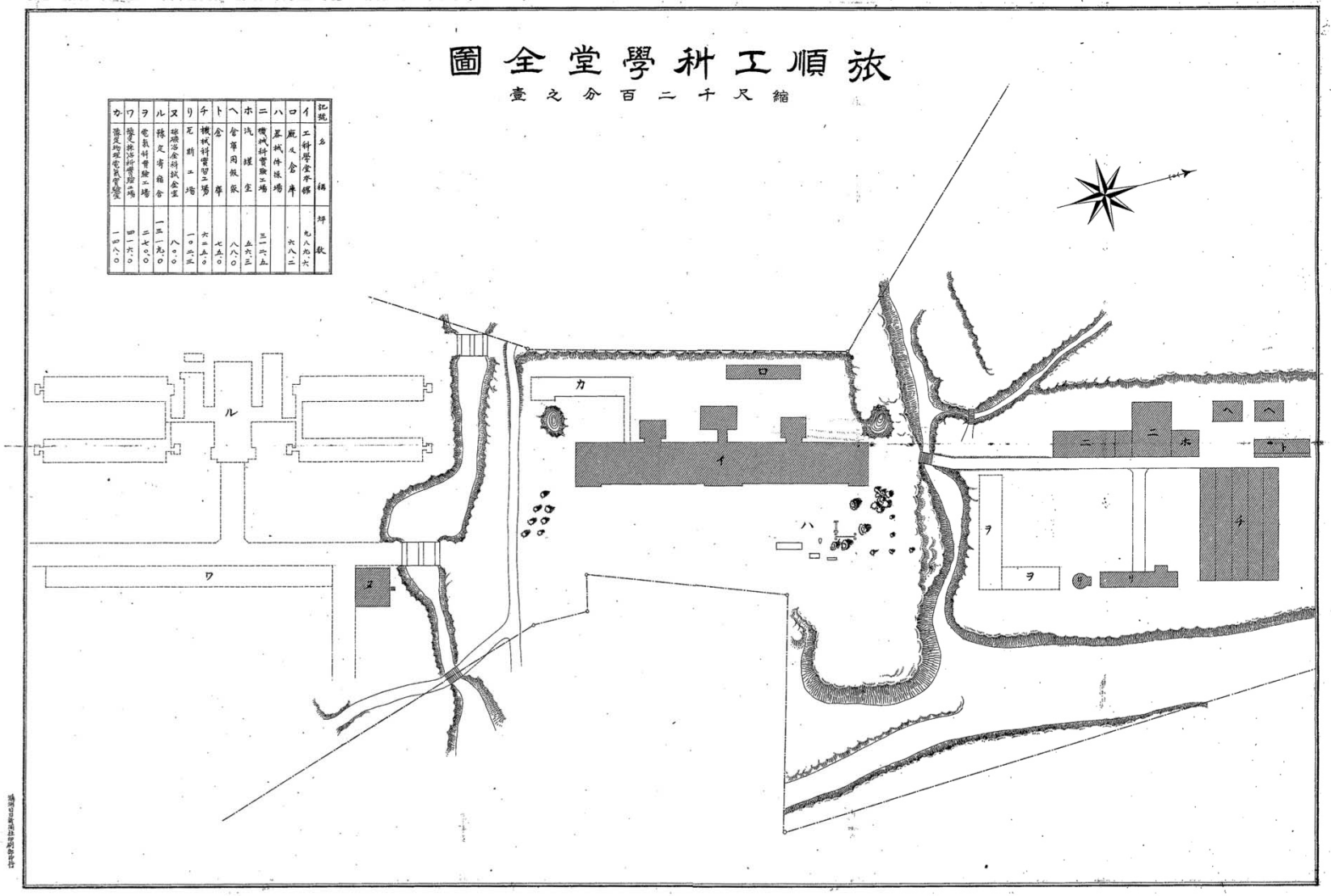


Figure 4-3 The Original RCE Campus Site Plan in 1911

Figure 4-4 Photo of the Enbujyo

In facts, according to the relevant history records, the building of student dormitory became the most important school construction project (Figure 4-5). In April, 1912, the east (東寮), central (中寮)and west (西寮) part of the dorm were completed as the '日' plane type. Concurrently, other supporting facilities like cafeteria and kitchen had already been deployed, made it becoming as the largest building on campus. In the same month, electrical and physics classrooms (電気及び物理学教室), chemical laboratory (化学実験室) had been also completed. In addition, the research speculated that part of the boiler room and guardroom for the dorm also had been completed at the same time.

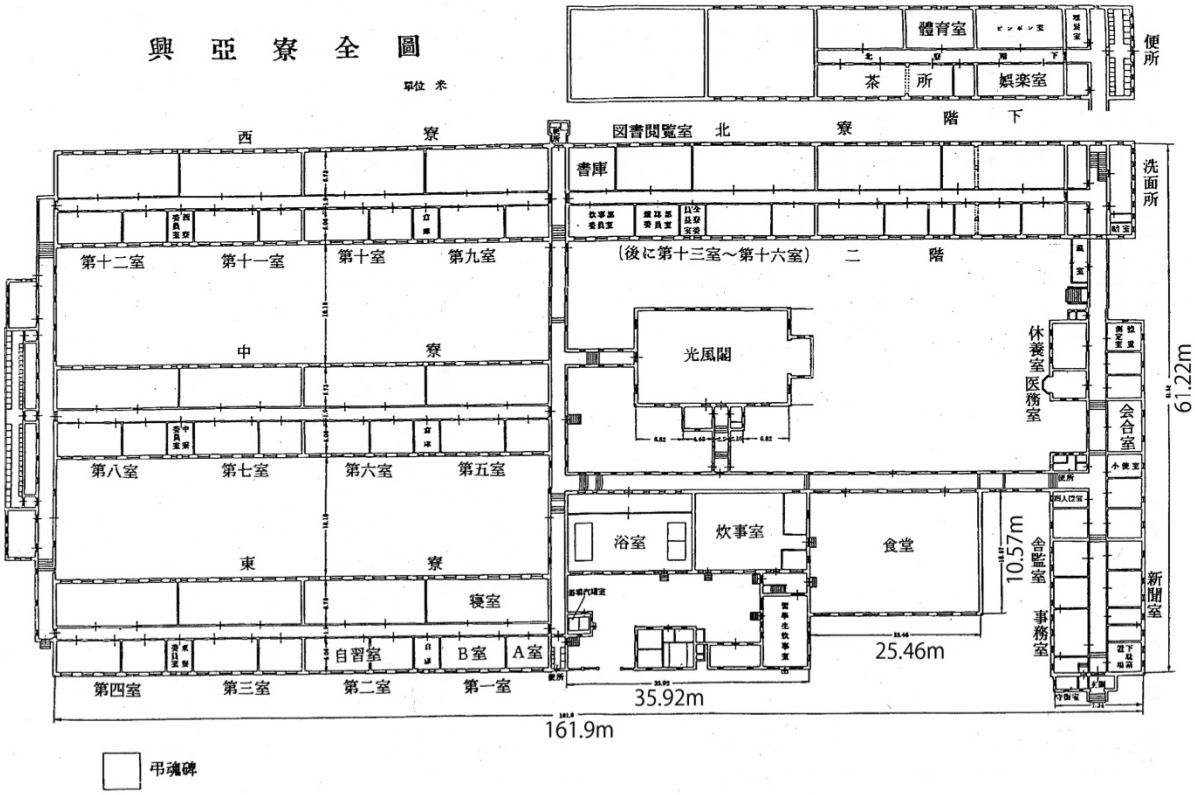


Figure 4-5 Plane of the Student's Dormitory

Since the construction of the dormitory, more surprising things happened on campus. On June 15, 1913, a Budo-Kai (武道会) was held in the new reconstructed Enbujyo (演武場) where, really amazing, was originated from the Assaying Laboratory (採鉱冶金学科試金室) completed in 1910 for the Mining & Metallurgy Discipline. The reason for this transformation was that in order to avoid the unnecessary affection to the new constructed dorm by the laboratory, the building was transformed into Enbujyo (演武場). On the exterior of the building standing a giant chimney which had nothing to do with the use of the field is the remains of the original architectural features of the original Assaying Laboratory, which became the first incredible event of the seven's in the College[105]. Due to these changes, the new Mining and Metallurgy Laboratory (採鉱冶金実験室) was speculated that to be completed between 1912 and 1913 besides the Heat Engine Laboratory (熱機関室) in the north of the campus. January 1913, an additional construction for student's meeting among the dorm buildings named as '光風閣' (Figure 4-6) was completed within the same time the surrounded playground was also completed. Until 1913, the dorm region had been fundamentally accomplished. Meanwhile, the mechanical engineering laboratory and factory (機械工学科実験工場) located in the north part of school was finished construction in 1913.

Figure 4-6 Photo of the '光風閣'

Contrast the school's campus site plan in 1923(Figure 4-7), it is obvious that most of the buildings in the campus were completed before 1913, except that the wireless telecommunications agency (無線電信所, renamed as '高周波実験室' in 1939)

compartment completed in 1917, the KOA Monument (興亜記念碑) completed in May 1919 as well as retrofitting dorm Bei-Ryo (北寮). Thereafter, the Upgrade Monument (昇格記念碑) was completed in 1924 for the sake of commemorating the upgrading from school to college; in 1926 the original research building (研究棟), temporary clubs (倶楽部) and temporary preparatory classroom was completed; then in the year of 1928, the Preparatory teaching building (予科教室棟) was completed too. After a 7-year stagnation of the construction, retrofitting the Enbujyo (演武場) was completed. The next year, a second gas storage tanks and a new warehouse west to the main building were completed; same year, the former research building was retrofitted and renamed as Applied Chemistry Laboratory Building used for the new added Applied Chemistry. In 1938, the additional construction in the south of the campus where the Fuzoku Youseijyo (附属養成所) was constructed; in 1939, the build-out of the main building and the Mining and Metallurgy lab was completed.

Until then, the construction of the school was basically completed and no other large-scale projects up to the campus closed in 1945.

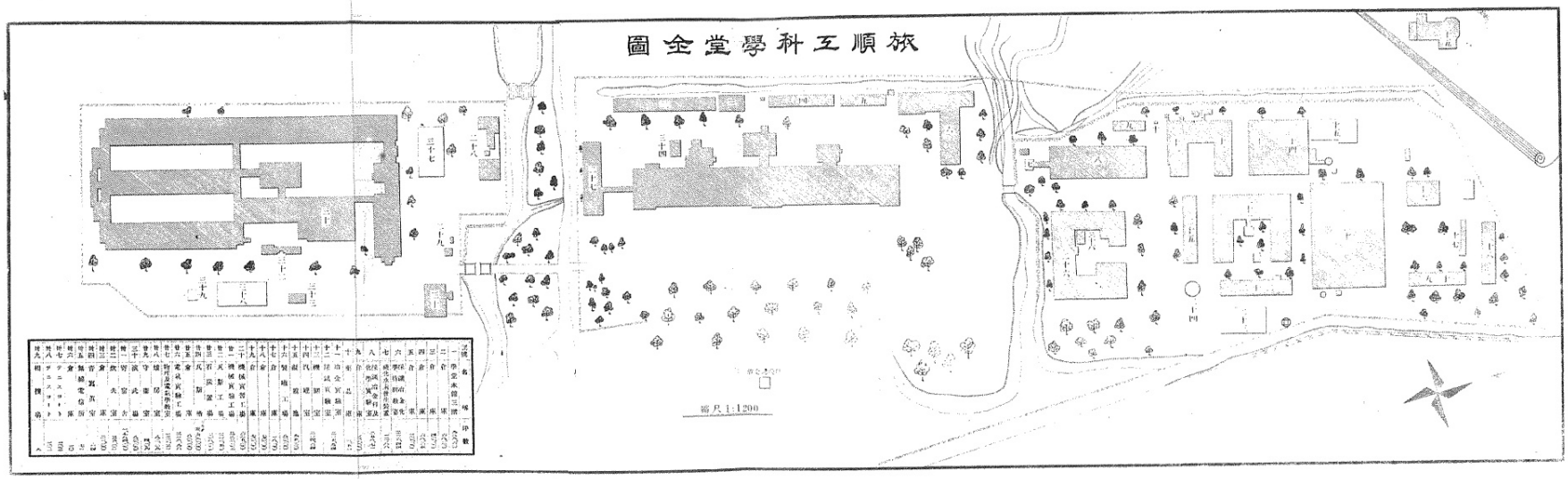
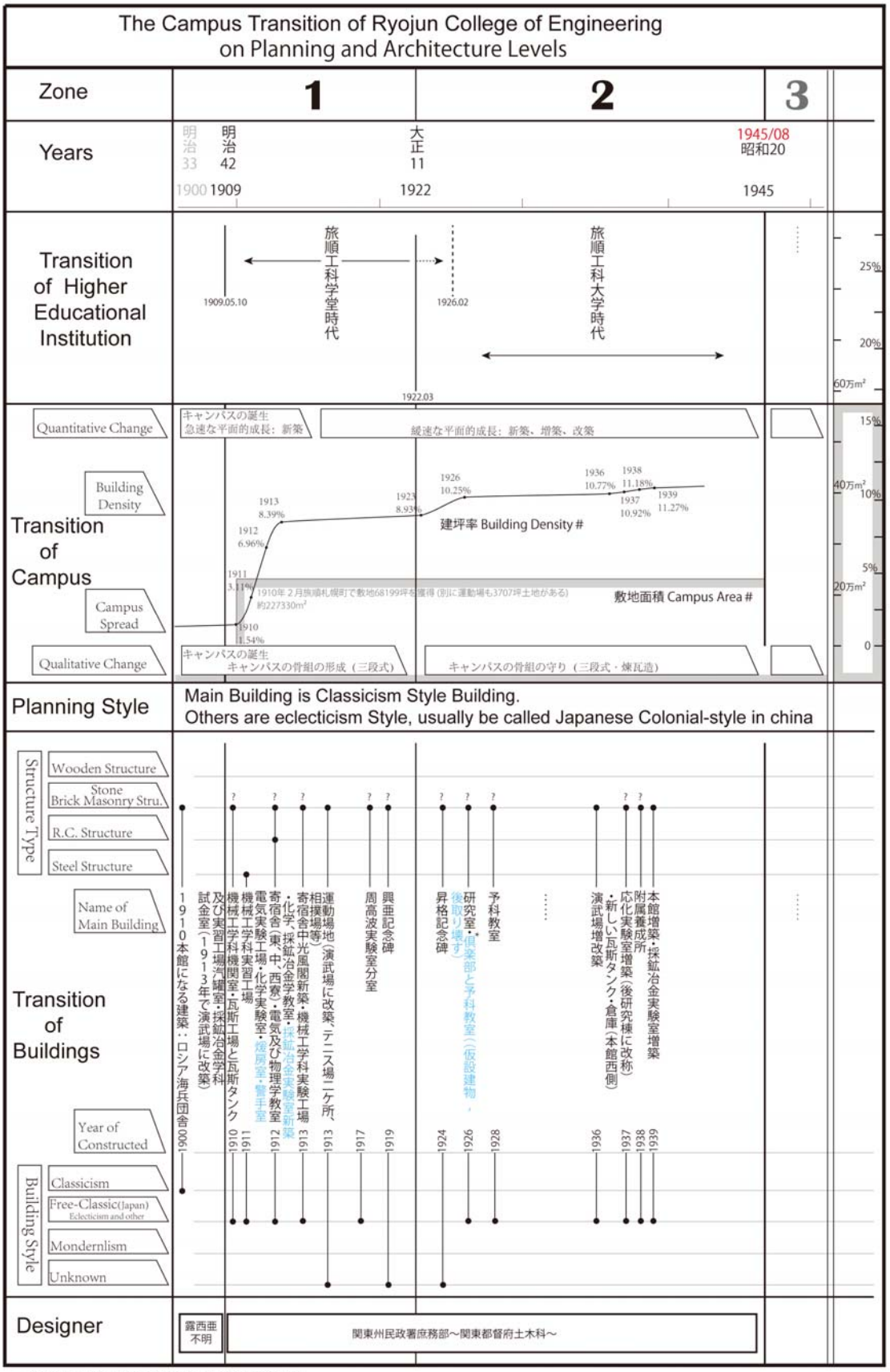


Figure 4-7 The Original RCE Campus Site Plan in 1923

c. Analysis of the Campus Transition

The analysis of the campus site evolutional progress is shown as the Table 4-3.

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



? Means accuracy about structure type not ensured

* Blue Words: Not directly derived from first-hand materials,therefor accuracy not ensured. But ,this is a conclusion based on the study of first-hand materials.

Date calculated based on records in the Series of books '旅順工科大学(学堂)一覧'。

From the announcement of the founding of the Ryojun Engineering School in May 10, 1909 to the shut in 1945, according to history information and records, the research focus on two time periods:

First phase, the Ryojun Engineering School period (旅順工科学堂時代), 1909.10 – 1926.2. In addition, there was no enrollment of new students from March 1922.

Second phase, the Ryojun College of Engineering period (旅順工科大学時代), 1922.3.31 – 1945.8.

What the research should emphasize is that the school in its first period belonged to the Higher Educational system as the governmental higher industrial school in the old Japanese education system, which is equivalent to national institutions of higher education in nowadays. In the second period, which was after the upgrading, it equals to a national university. It was comprised of the Japan 'Old three engineering college (旧三工大)' with Tokyo Industrial University (東京工業大学) and Osaka Industrial University (大阪工業大学), now it is the engineering department in Osaka University.

For the analysis of the campus focused on change of the land use and level indicator on campus building density. As already clarified in the former part, the size of the campus area has not produced a change. The school has maintained school teaching site covers 68,199 Tsubo (坪) which is 227,330.00 square meters, additional sports ground 3707 Tsubo (坪) which is 12,356.67 square meters. In spite of the detailed records about the campus area, historical documents have not been specified in detail for specific campus land border with only parts of the land borders of the campus known. For the sake of this, the research does not label the border for the Ryojun College of Engineering excepted for a general scope.

According to the annual construction situation of the campus, the research finds out the variation diagram of the building density on campus. As shown in the Figure 4-8, there are two features about the Evolution progress of the site.

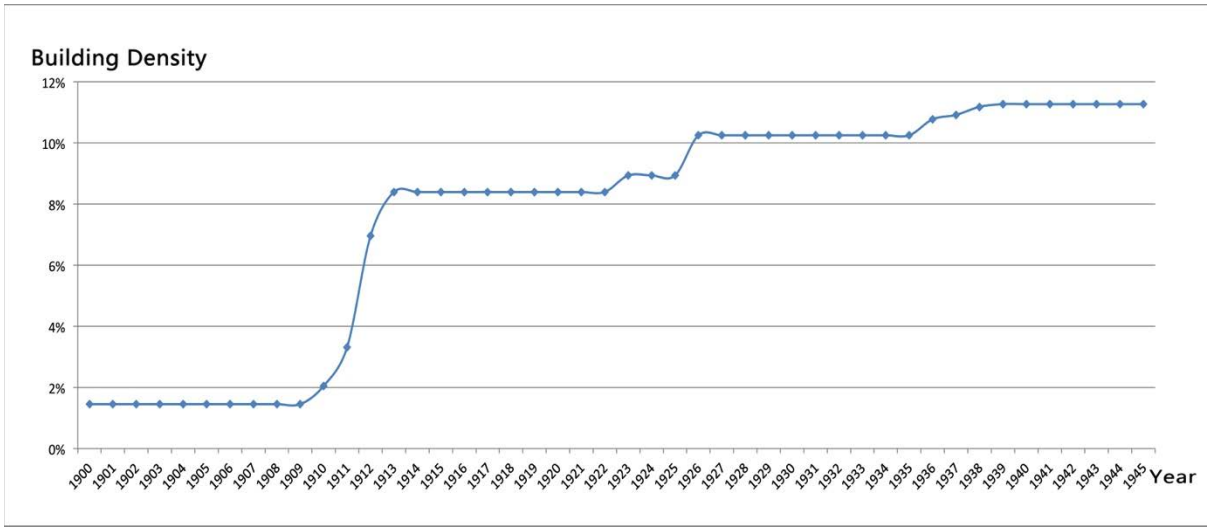


Figure 4-8 Building Density Curve of RCE Campus before 1945

a. At the beginning of the construction, the density of the building is 1.54% due to the continued use of the main buildings from original Russian Navy Campsite for teaching building.

b. There are obviously some stages during the construction. The main construction stage is from 1910 to 1913. The building density zoom to 8.39%; After this 4-year period, the building density only added 2.88% making the total be 11.27% without any other large scale construction or retrofitting projects in the next 31 years. This phenomenon is explained at the beginning of the school building on the suitable future plans for school development, full consideration to the school development process desired function space. Therefore, in the follow-up development of the school, the school only process the construction projects based on the demand according to the additional new functions for school following with the development of the time. For example, after school was upgraded to College, constructing the preparatory building for the found of the preparatory discipline. The retrofitting the applied chemistry building in the response to the adding of applied chemistry discipline.

One thing needs to be emphasized is that the research did not consider the other index about the student dormitory buildings of the Ryojun College of Engineering used in other sites. In 1926, the student dormitories in the southern area on campus were used as preparatory students' dormitory, meanwhile, the undergraduate students' accommodation was arranged in other dormitories transformed from various Russians remained buildings in other parts of the city[106] (Figure 4-9). Include the Suimei Ryo (翠明寮), the Shin-suimei Ryo (新翠明寮), the Koumei Sou (高明荘), the Tazan Ryo (他山寮), the Waraku Ryo (和楽寮), the Kyu-hokumei Ryo (旧北冥寮), the Hokumei Ryo (北冥寮), the Azuma Ryo (吾妻寮), the Akashia Ryo (アカシヤ寮), the Kofuji Ryo (胡藤寮), the kyu-tokiwa Ryo (旧常盤寮), the Tokiwa Ryo (常盤寮), the wakakusa Ryo (若草寮), the Nisshin Ryo (日新寮), the Bukkyukaikan (仏教会馆) or called the Toei Ryo (塔影寮), the Seimei gakusha (晴明学舎), the Seishin Ryo (正心寮), and so on.

Figure 4-9 The location of the Bachelor's dormitories in Ryojun city

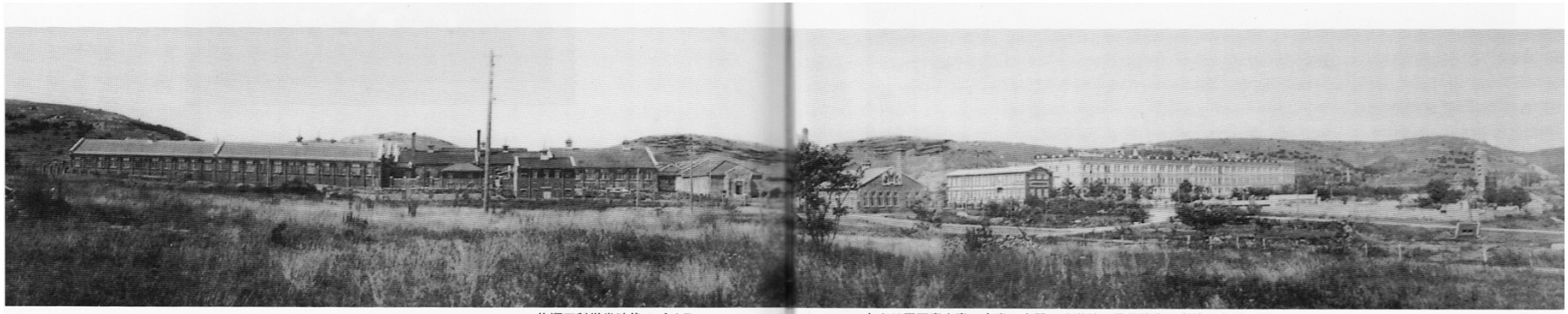
After 1939, due to the demand of the college utility was satisfied with the constructed infrastructures (Figure 4-10), accompanying with intensified situation in the later period of the World War II and the instability of the social environment, new constructions on campus basically under suspended state.

For the analysis of the construction phase, the research mainly focused on the evolution of the building structure and architectural style. Except the unknown of the designer for the main building, other buildings constructed in the campus was designed by the KANTOSHUMINSEISHO SHOMUBU (関東州民政署庶務部) which renamed as the KANTOTOTOKUFU DOBOKUKA (関東都督府土木課) later. The main building belongs to Neo-Renaissance Architecture style, with outside painted white, masonry structure and three floors above the ground.

The buildings of the laboratories & the practice factories (Figure 4-11) in the north side of the campus and the student's dormitory (Figure 4-12) in the south side that constructed in the early stage were one-floor buildings. The architectural style is similar to Japanese Colonial Style attached with some eclecticism features that were used in the South Manchuria Industrial School campus. The difference is that partial roof equipped with decorative 'Onion Domes' shape components which was also decorated for the Electrical and Physics Teaching building (電気及び物理学教室) (Figure 4-13) and the Mining and Metallurgy classroom (採鉱冶金学教室) (Figure 4-14) which were built in the same period. Out of the above features, the buildings which were constructed in the early stage also had a common feature: sloping roof.

In contrast to these early completion buildings, the subsequent constructions were commonly used sloping roof that is the consistent style with main building. The Research building (研究棟) was completed in 1926, for the sake of echoing of the main building, adopted simple European style with three floors. Same with the main building, the building adopted long slide-squared windows in the first and second floors, while Romanesque Revival style arched windows were decorated in the third floor, and even the stuck-out roof was used. Moreover the build-out of this building completed in 1937 still followed this same design style (Figure 4-15). Completed in 1928, the preparatory Classroom Building also take this style, the difference only is the building with 4-floors to adapt the local terrain (Figure 4-16). However, the subsequent build-up part did not follow that style, except the long slide-squared windows feature. In addition, it partially designed sloping roof (Figure 4-17).

According to the analysis of the historical literatures, there has not a specific record to the structure form of the practice teaching which located on the north side of the campus. Based on the historical photos, the research speculate that: Completed in 1911, the mechanical practice factory (機械実習工場),later renamed as the work factory (工作工場), adopted a light steel structure, with light steel truss roof. (Figure 4-18); completed in 1912, the electro experimental factory (電気実験工場), later renamed as the second electric lab (電気第二実験室) adopted a concrete frame structure, set the corbel column erected cranes, with the light steel roof truss structure (Figure 4-19). Other laboratories, practice factories and buildings are supposed to be the brick masonry structure buildings.



旅順工科学堂時代のパノラマ　　左より興亜寮東寮、食堂、玄関、武道館、階段教室、本館、実習工場

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

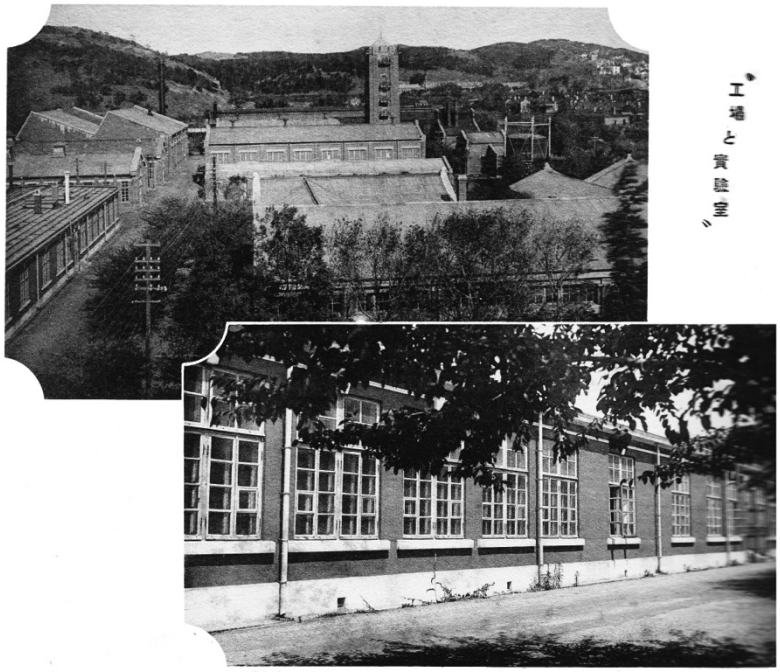


Figure 4-11 The Laboratories & Practice Factories Zone

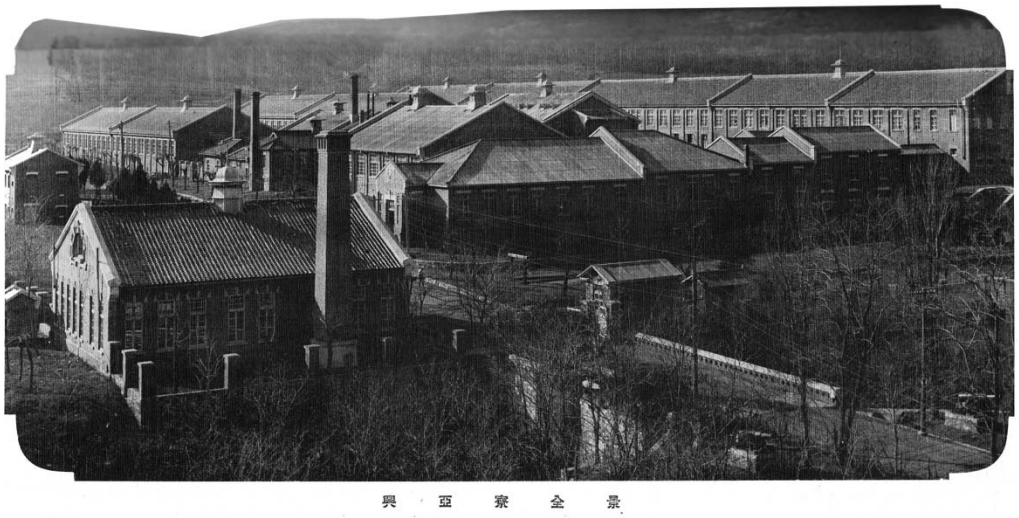


Figure 4-12 the Student's Dormitory Zone in 1920s

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

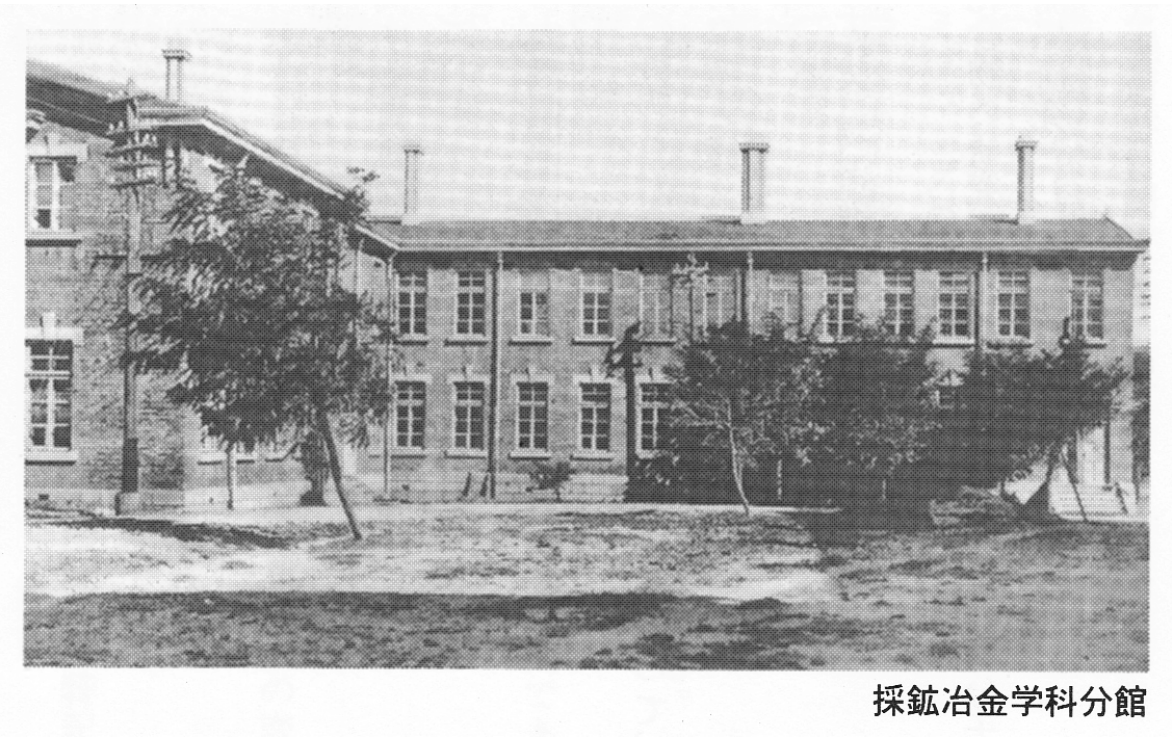
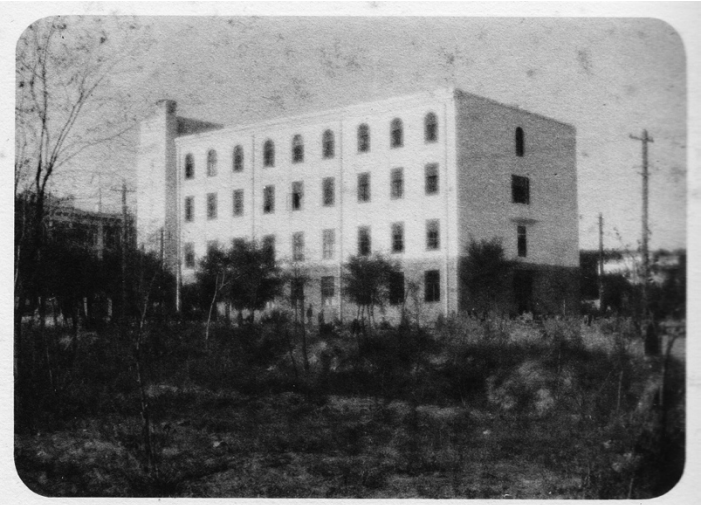


Figure 4-14 Photo of the Mining and Metallurgy Classroom Building

旧大学本館と応用化学教室．百年の星霜に堪えて…

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



鑛　科　校　舍

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

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

Building

Figure 4-18 Inside of the Mechanical Practice Factory

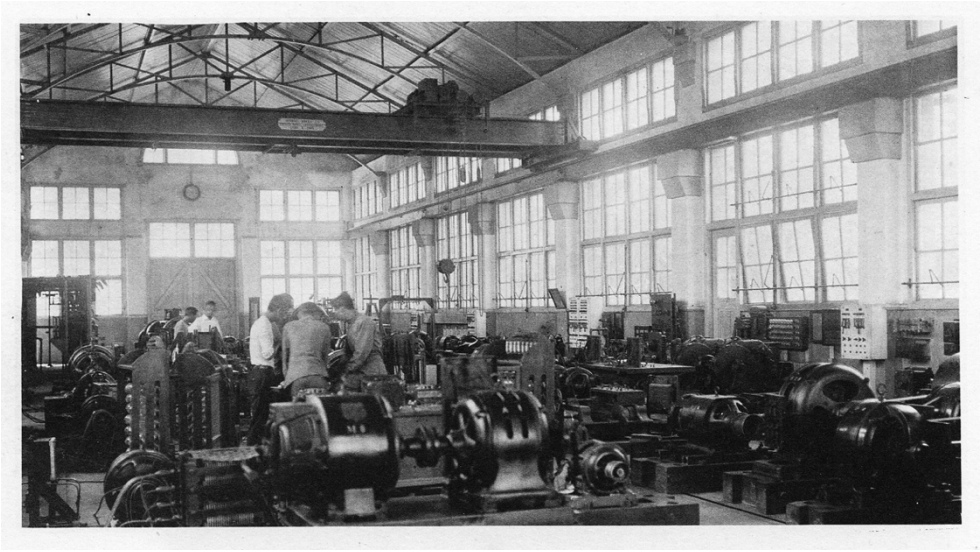


Figure 4-19 Inside of the Second Electric Laboratory

4.2.3 Analysis the Spatial and Form of the Campus

This section focus on variation of the campus morphology during the evolution of the campus over the years, based on the analysis of three aspects which are campus planning structure, the axis system and unit space. Since the establishment of the campus constructed upon the Russian remained buildings, for the analysis of this section, the research will include the building situation before the construction of campus in order to identify the evolution of the campus better. The analysis result is shown as the Figure 4-20.

a. Spatial structure of the campus

According to the analysis graph, it is obvious that two streams divided the campus into 3 parts. The planning structure followed this natural division with campus II as experiment and practice factory zone in the north, campus I as teaching zone in the central area and campus III as student's life zone in the south. The road leading to city center is located between campus I and campus III, which makes the campus be a typical 3-zone campus structure.

In 1911, because of the campus functional adjustment, the practice factories was integrated into the campus II showing a significant increase of building amount in this area. As for the new dorm in the south side campus III was still intensively constructed, the teaching function and the ancillary facility function were assembled into the campus I, in which time period the morphology of the campus had been initially formed.

In 1912, since completion of dorm and some facilities in the campus III, student's life zone, or called the ancillary facility zone, had been formed officially. Until 1913, the 3 functional zones had been basically formed, the morphology of the campus had been formed into 3-stage campus structure with explicit function and clear structure.

In 1917, the wireless telecommunications agency (無線電信所) constructed on the mountaintop at the northwest side of the campus, which added a small branch to the original 3-stage campus structure. Subsequent construction work has entered into a slow development period with main construction work focused on campus I where some teaching building and research buildings were built. The function of different regions in campus became more explicitly. Until 1939, the partition structure on campus had not been changed again.

b. Evolution of the axis system

In 1900, the original Russian Navy Campsite was established in the western suburb of the new town of Ryojun city, shaping into a line with the positive main axis direction toward the southeast and point to the old town, meanwhile, the lateral axis, or called horizontal axis, being perpendicular to the road that is leading to the city. It would be an amazing finding that the extension of the positive main axis was pointing to the eastern port of Ryojun (旅順東港), of which relationship will be discussed later. Excluding the consideration about the reason of the building orientation, the constructions in the Naval Base belonged to a simply axis relation.

After 1910, Ryojun Engineering School selected this region as the school site. By about 1-year construction, there were a large number of buildings built in the campus. New

buildings mainly concentrated in the experiment and practice factories that belonged to the campus I located in the north of the campus, following the main building's axis system and keeping the perpendicular relation to the road leading to the city. Also, the horizontal axis of the main building coincides with the road axis in the campus II, forming into an important axis controlling the building construction work in campus II.

1913, having basically accomplishing the construction, it was more apparently presented about the superposition of different axis. For instance, the horizontal axis of the main building not only controlled the building construction in campus II, but also became the main horizontal axis of the dorm building in campus III. With the same counterpoint relations, the central axis of the east building cluster in campus II just coincidentally penetrated the main entrance of the campus I and campus II, which overlapped their road axis. As for the longitudinal axis of various divisions in campus, they were all parallel to the road leading to the city pointing to the Ryojun city. This simple system with orthogonal relationships of axis reflects the relationship among buildings in campus.

The wireless telecommunications agency (無線電信所) located outside the campus which was constructed in 1917, but there exists some relations between its building axis and the axis system in the campus. The radio buildings face to the campus being at the foot of the mountain, which the axis of the agency just penetrated the central point in the main building.

Until 1939, during the development of the campus, the applied chemistry lab building (応化実験室), i.e. the original research building, and the preparatory teaching building (予科教室) in campus I also followed this counterpoint relationship to the campus axis system. One of them became the opposite view of the campus entrance, while another became the building which showed response to the Physics and Electricity teaching building (電気及び物理学教室) and located beside the main entrance of the campus. What needs to be emphasized is that, the Koa Monument (興亜記念碑, 1919) in the campus I was set to be in front of the research building (研究棟) as opposite scenery to the main entrance too, while the Upgrade Monument (昇格記念碑, 1924) was set to be in front of the main building locating on the positive axis pointing to Ryojun city, which highlighted the solemn and holy spirit of the monumental constructions (Figure 4-21). Regardless of the consideration about the quickly removed temporary club building (倶楽部), this kind of simple orthogonal axis relationship had not been changed during the development of the campus and became a control system for the development of this College.

Note: these counterpoint relationships are not explicitly given by the historical information. This kind of relationship in the research is the conclusion through an architecture analysis about the campus.

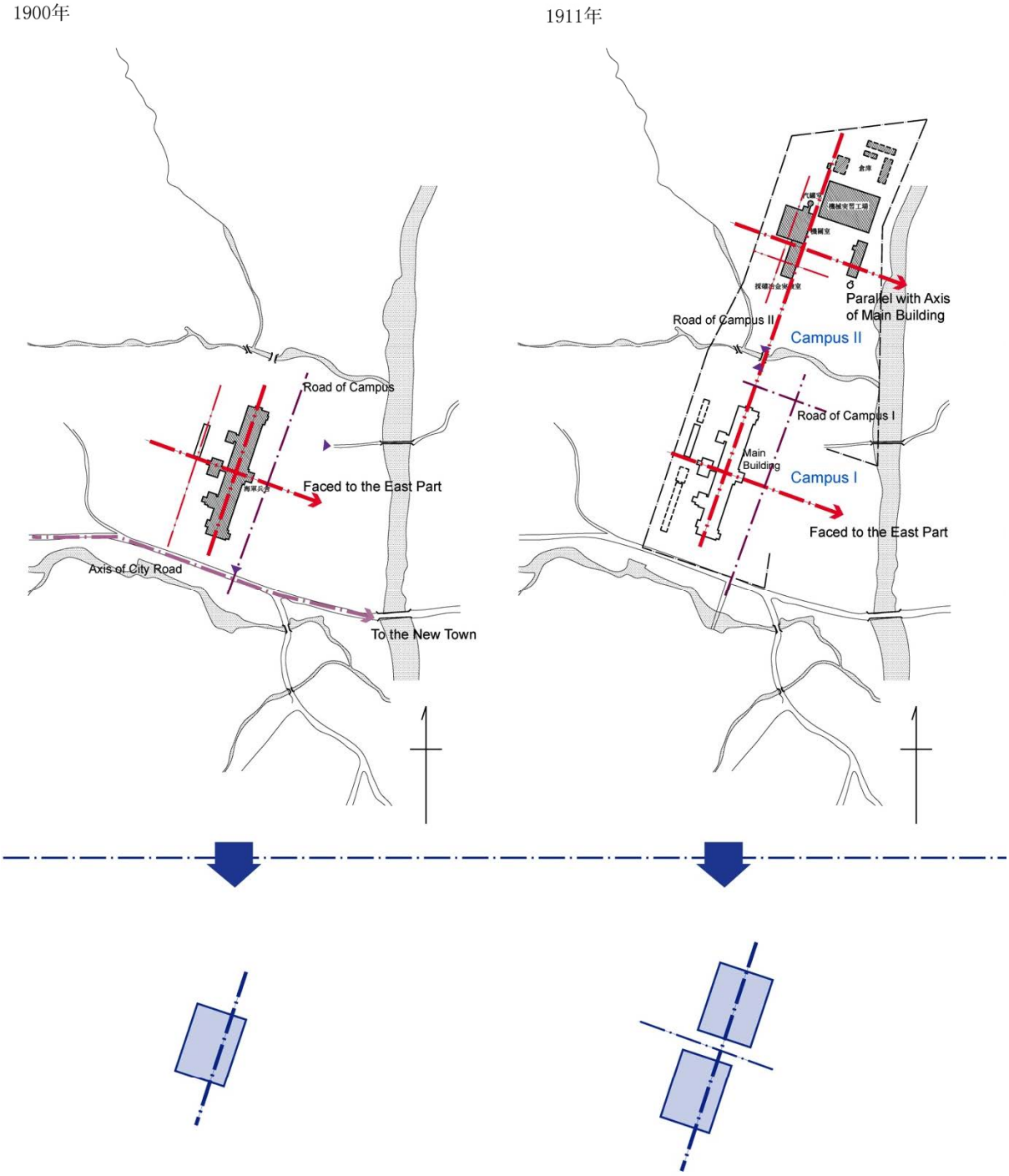


Figure 4-20-1 The Spatial and Form Analysis graphic of the RCE Campus

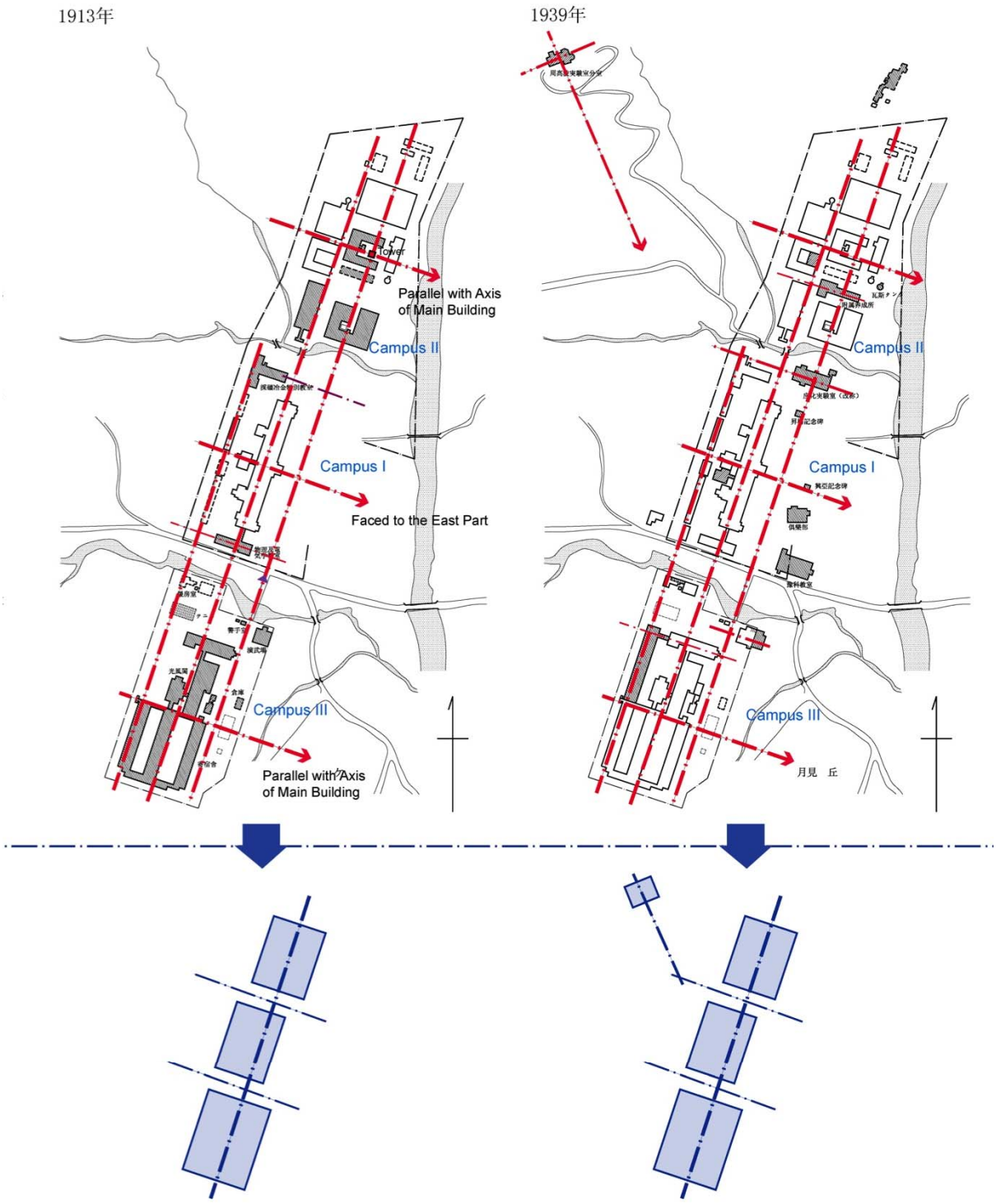


Figure 4-20-2 The Spatial and Form Analysis graphic of the RCE Campus

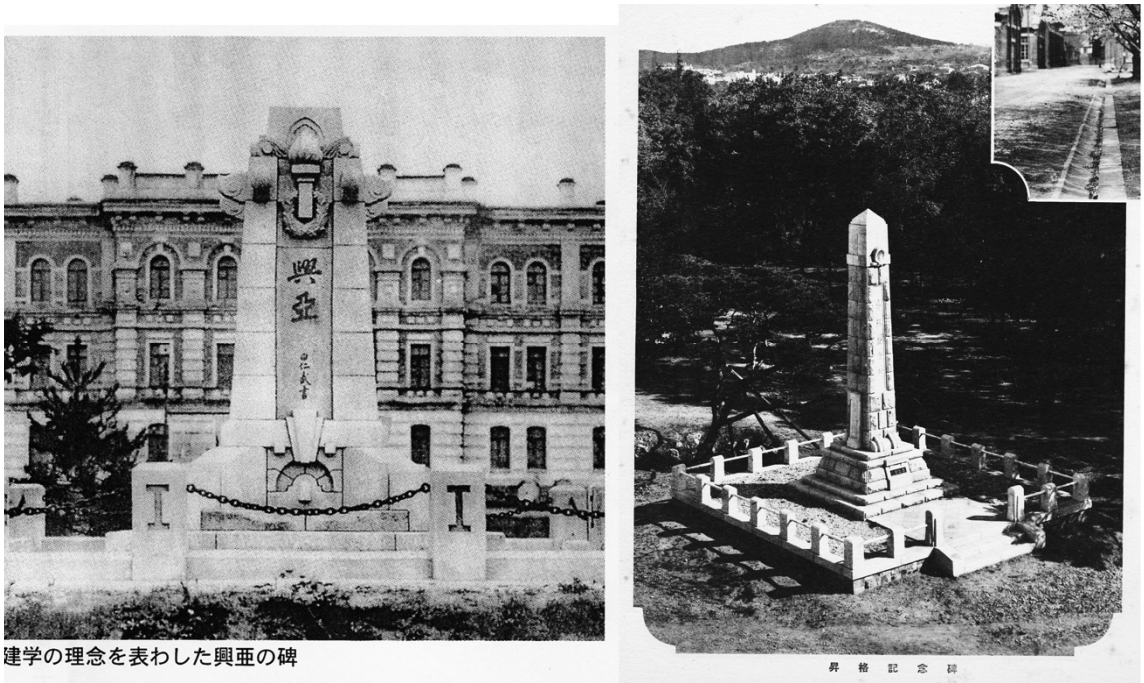


Figure 4-21 Photo of the Koa Monument and the Upgrade Monument

4.2.4 The Relationship with Ryojun (Lunshun) City

Unlike the commercial port characteristic of Dalian city, the geographic location determine its state as the second largest city in Kwantung Leased Territory which played a city role in military bridgehead. Therefore, the east port of Ryojun (旅順東港) was used as military port becoming a significant factor to the foundation of the city. This also led this land to be a conflicting place by different parties. Due to this particular characteristic of Ryojun, most of the city construction work had been done by the Russian Occupation Period in 1905. After 1905, the construction work by Japanese colonist just was retrofitted based on Russian remained buildings. Compared to the rapid expansion of the Dalian city in the same period, Ryojun showed a little conservative.

The old town in the east and the new town in the west comprise the Ryojun city, where there was south Manchuria railway along the Long River (龍河) in the central area between old and new town separating this two regions and the Nihon Bridge (日本橋) with Ryojun railway station at the east side of the bridgehead set to be a connection for this two regions near the estuary. The east side old town had long history and was given the name as Lvshun Kou (旅順口) in 1371. The urban area was built by the mountain and extended along the strike of the river in valley to the port. After 1880, Qing Dynasty regarded this harbor as a base for the Northern Fleet and began the construction of Naval Base with forts becoming an extremely important military fortress for Old China. After March 27, 1898, Russia obtained the right of usage of Lvshun Military Port (i.e. the east port) and Dalian commercial port based on the 'Russia-Qing Convention (旅大租地条约)'. During the seven years late after Russo-Japanese War in 1905, besides the reconstruction and repair of the east port, the west new urban area was also constructed and left a large number of Russian style

buildings.

The planning style in the west Ryojun new town copied the structure of Rome, which was added a cross-shaped road system based on the Baroque style radial roads. It also reinforced the new downtown main axis pointing to the axis of Weihai city (威海市) locating across the Bohai (渤海) symbolizing the gateway to mainland China. Based on the Ryojun Map in 1920, the research draws a city axis analysis graph of the west urban area in Ryojun (Figure 4-22), showing that 4 sorts of axis systems with different design base to each of them respectively. First one of them regarded Oseko-machi (大迫町) as horizontal axis with Takasaki-machi (高崎町) as longitudinal axis forming orthogonal road network system in Ryojun new town, where the strike of the axes were parallel to mountain peak-line which surrounded the town in the north and east side. Second one was an overlay on the former one with two sets of radial baroque axis system, in which one complied with the link line of two rivers penetrating the urban area while another set complied with the strike of Takasaki-machi forming and through the center of the town area, pointing to the Weihai city. The third one was the cross line system based on the city axis plan highlighting the sense of presence and directivity of the line of axis, which led an amazing result is that the overlay of two sets of baroque system and the cross line system formed a special road network structure for Ryojun City. The last one was the Grid style street network showing an orthogonal relationship with the first baroque axis system based on the strike of the river in the city. This is the unique feature of Ryojun that such a small town included 4 different planning axis systems. In fact, the design skill of this unique axis system formed under the angle relationship between two baroque systems. This plan may seem complicated, but simple, although construction method is simple, but the thought of doing so is not easy.

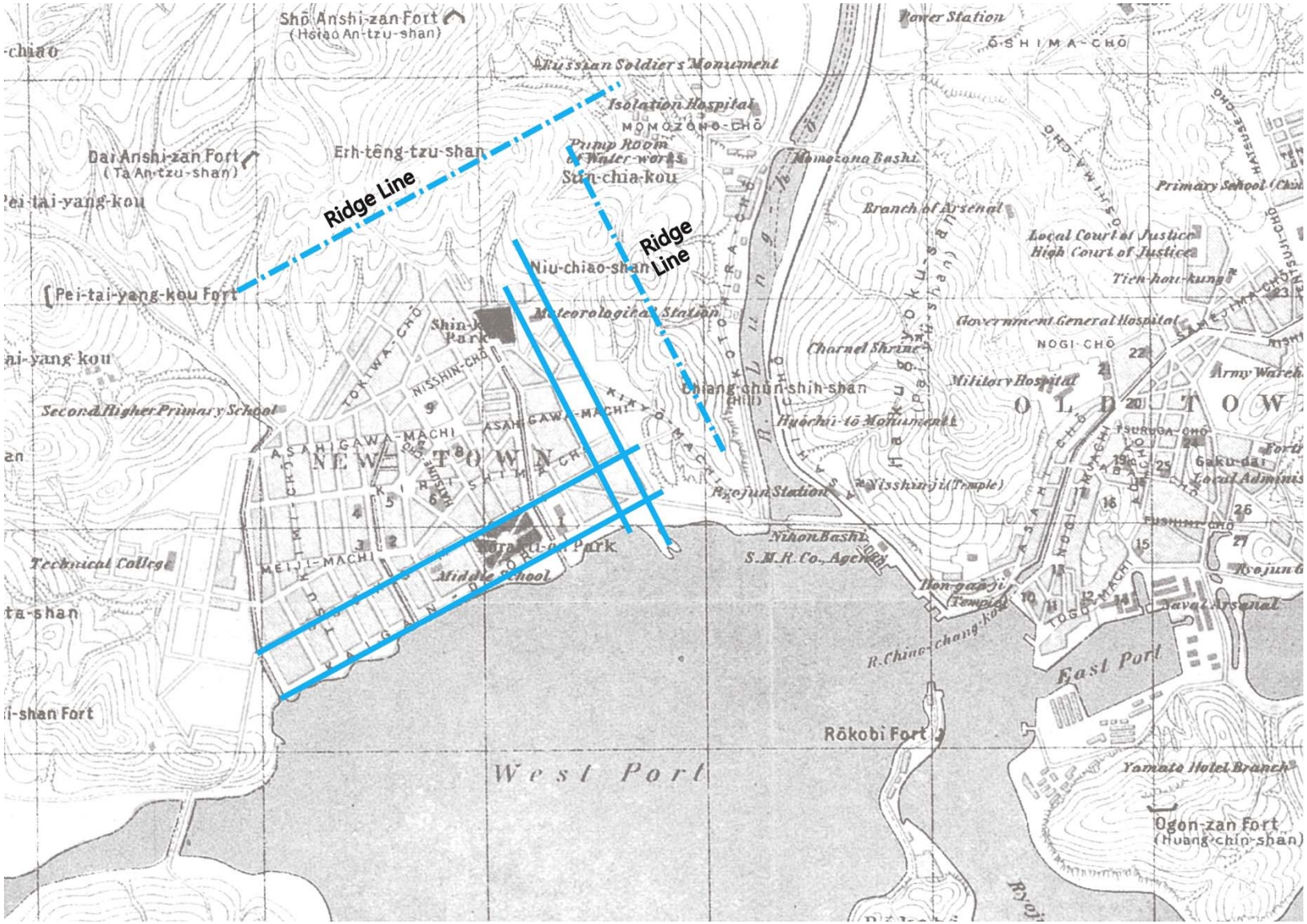


Figure 4-22-1 The Axis Analysis graphic of the Ryojun Western New Town

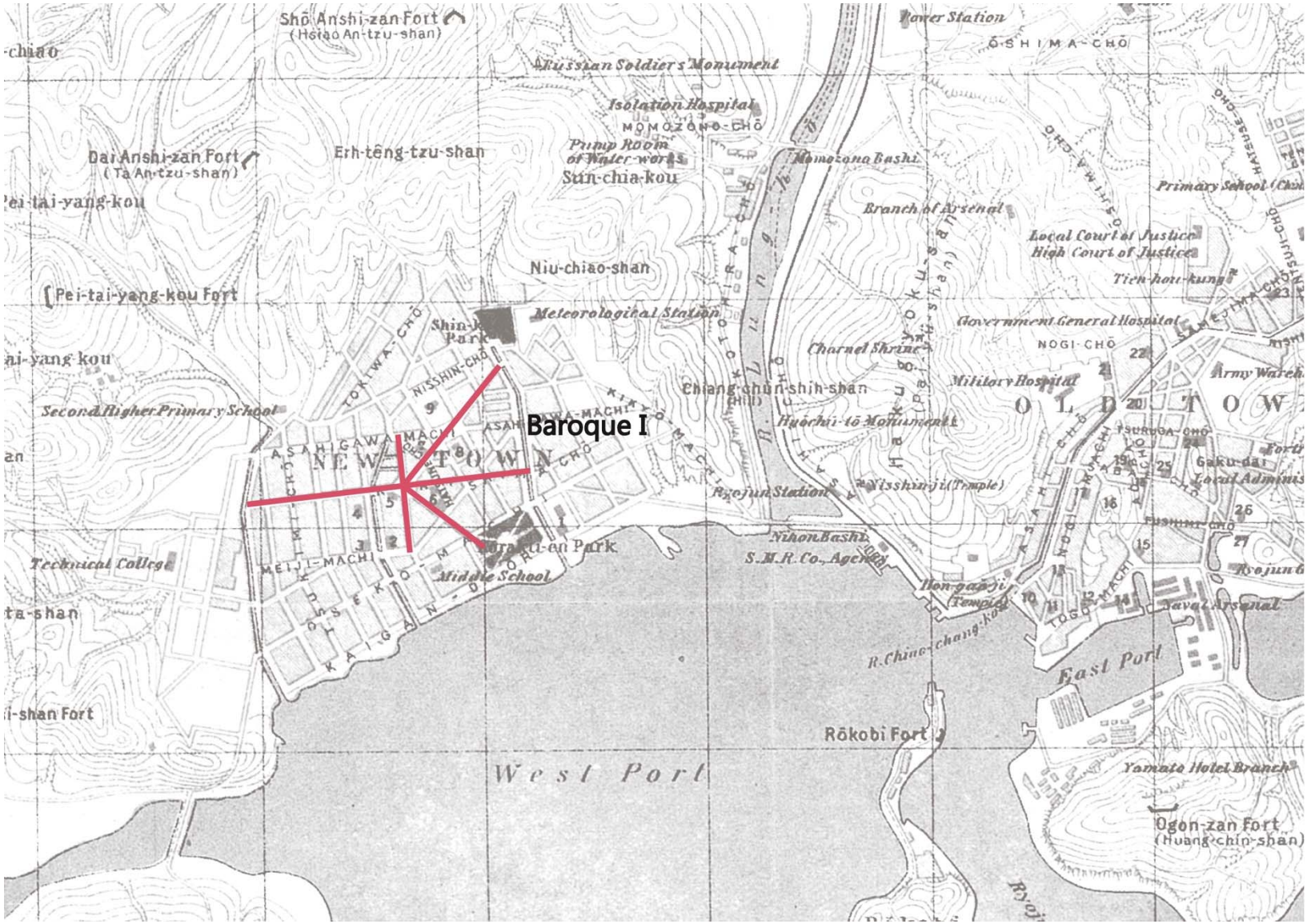


Figure 4-22-2 The Axis Analysis graphic of the Ryojun Western New Town

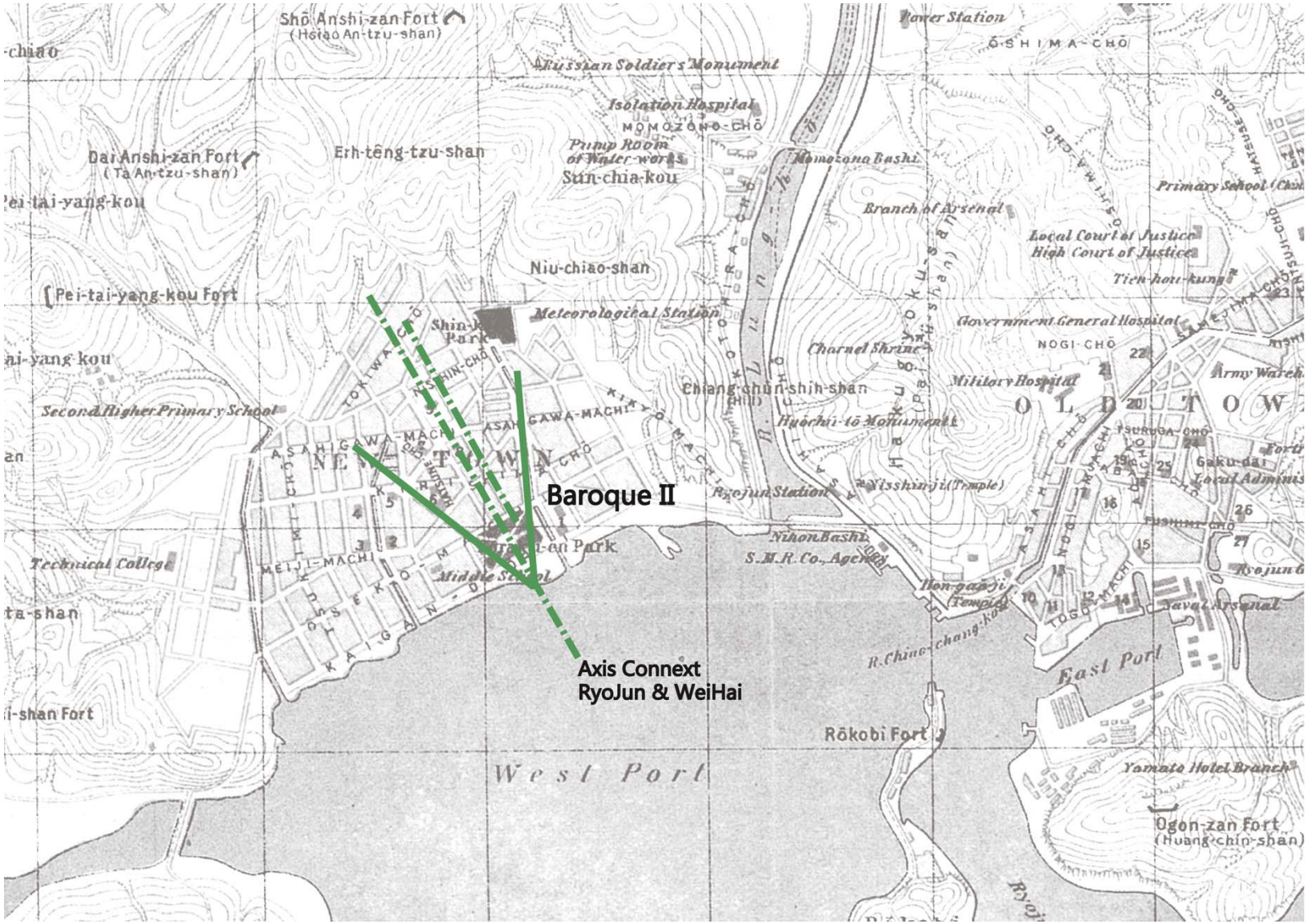


Figure 4-22-3 The Axis Analysis graphic of the Ryojun Western New Town

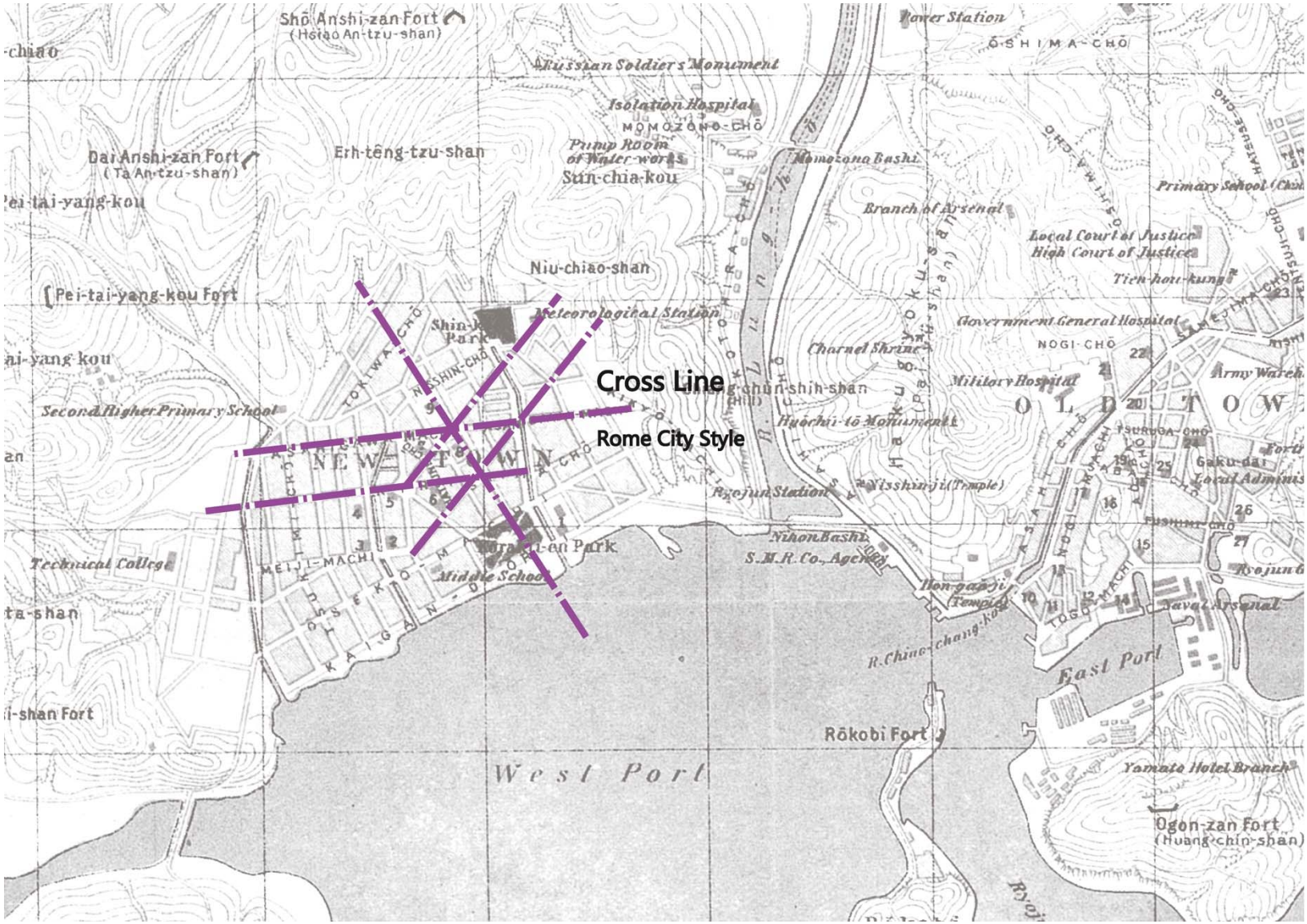


Figure 4-22-4 The Axis Analysis graphic of the Ryojun Western New Town

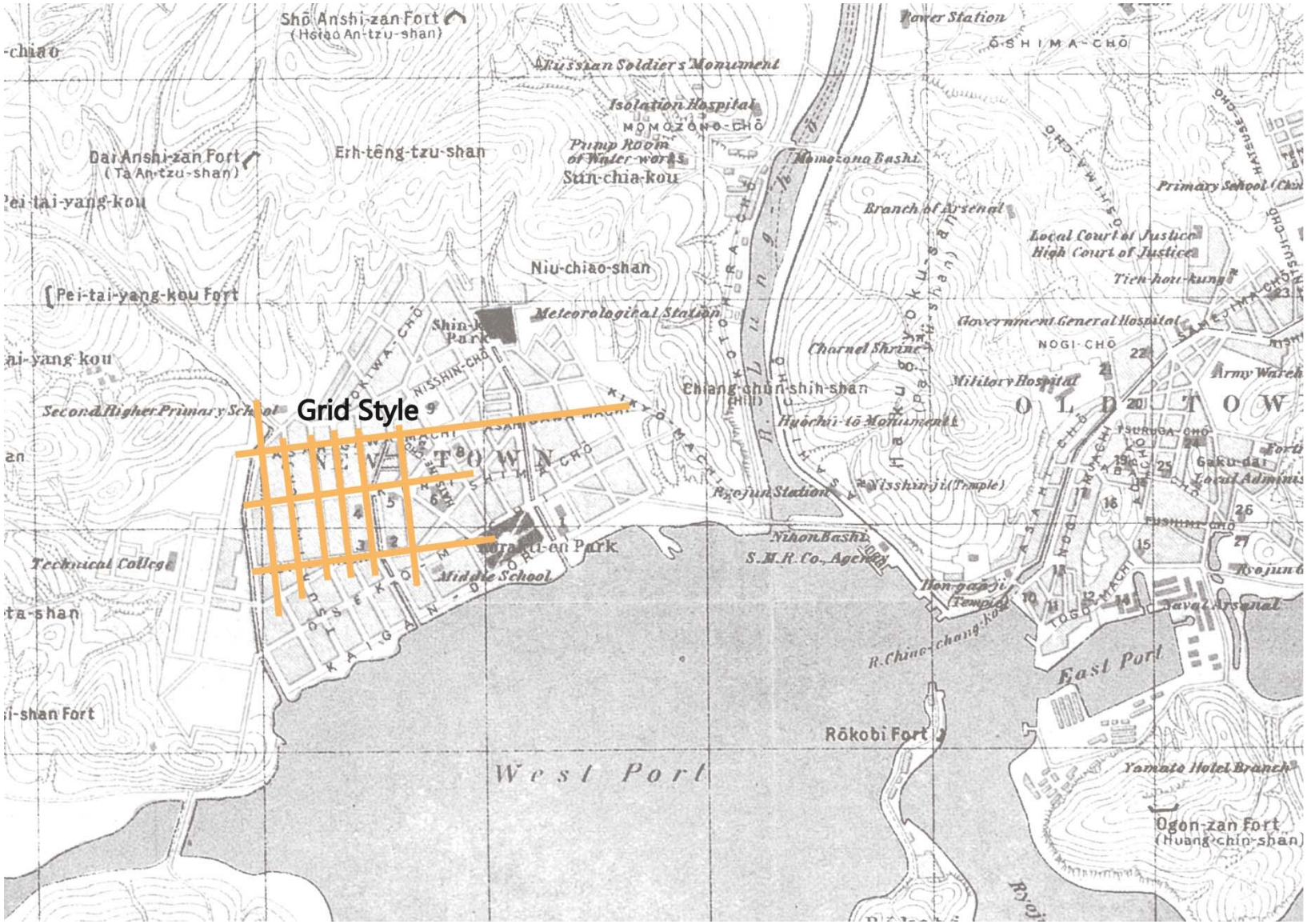


Figure 4-22-5 The Axis Analysis graphic of the Ryojun Western New Town

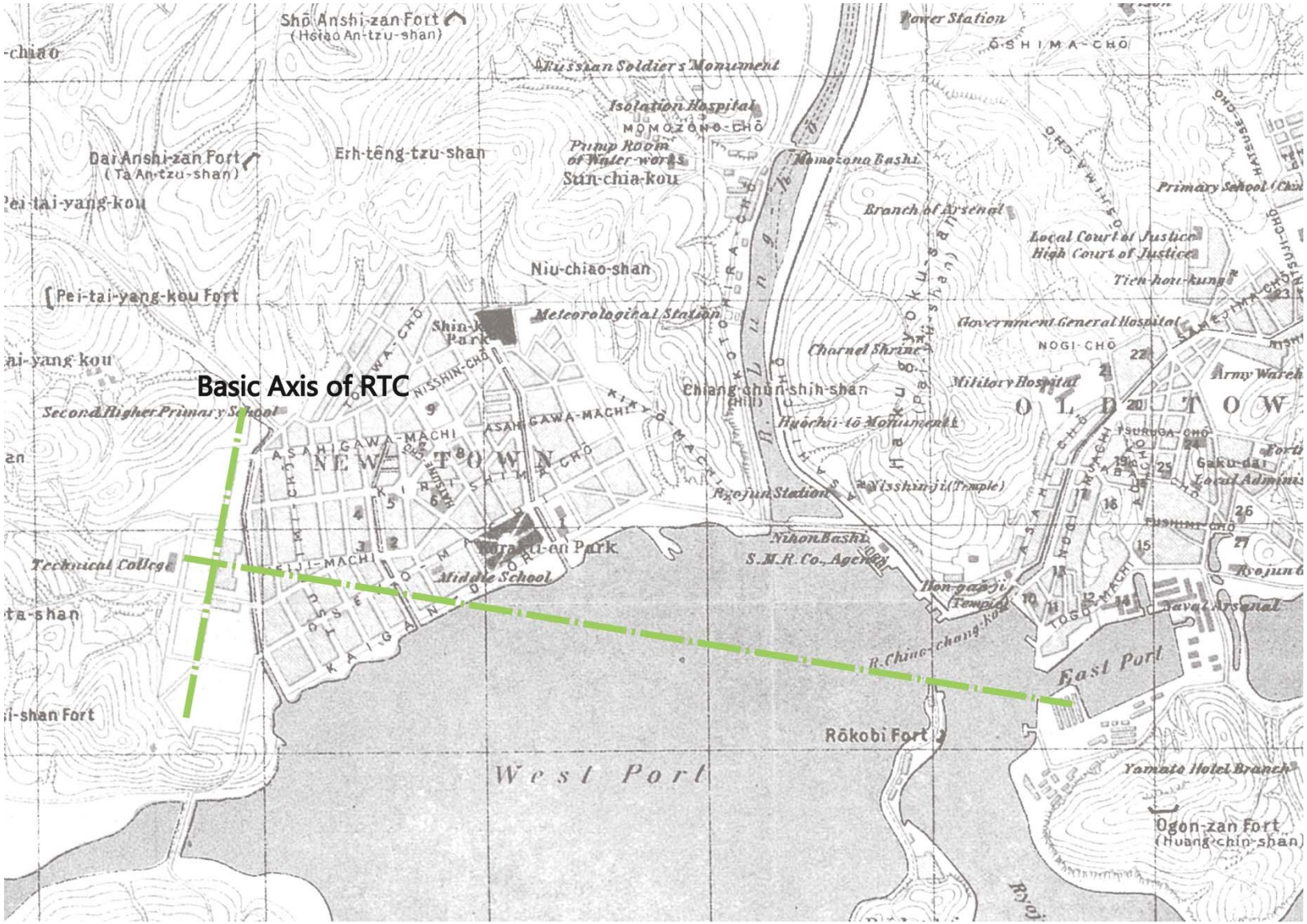


Figure 4-22-6 The Axis Analysis graphic of the Ryojun Western New Town

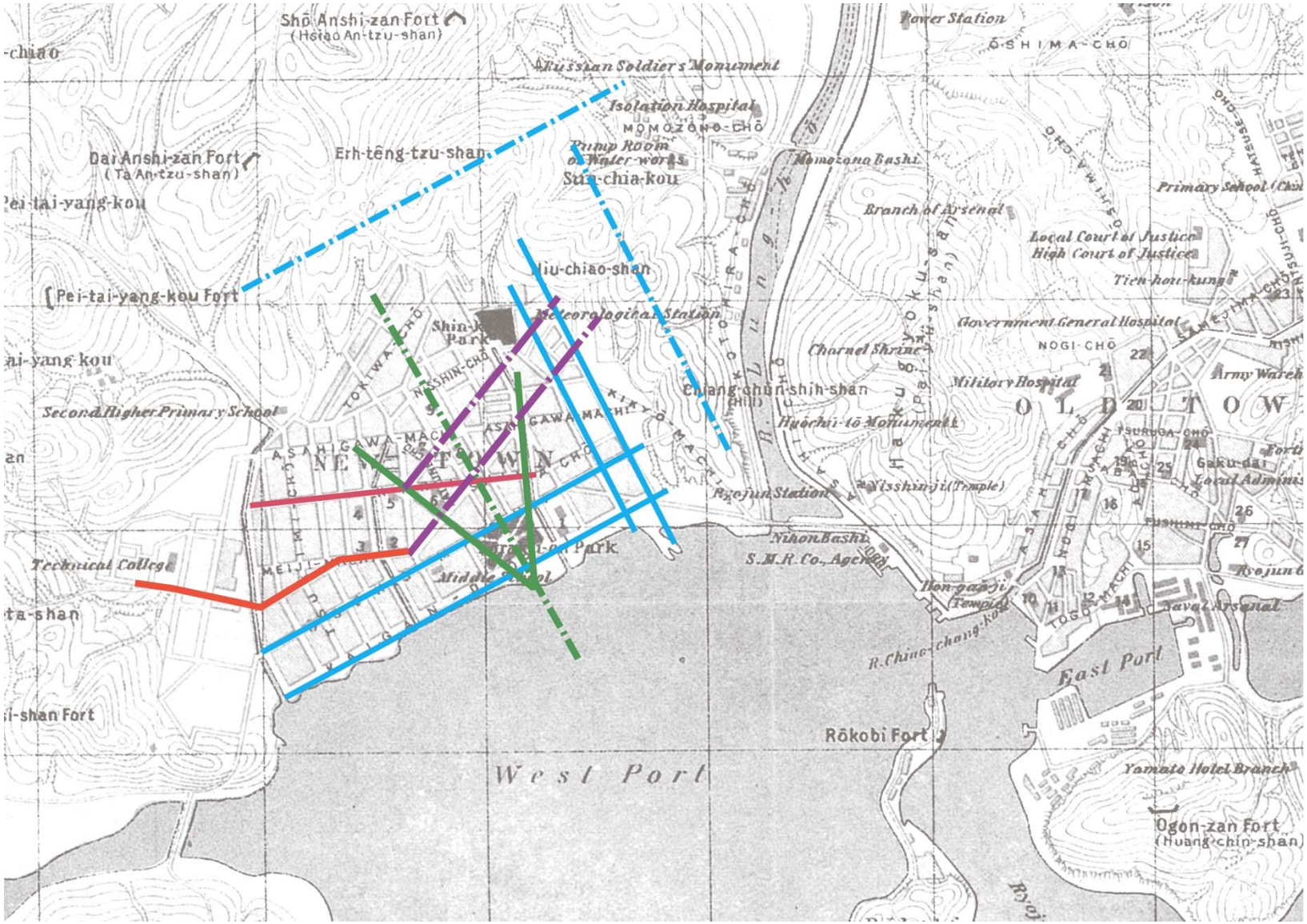
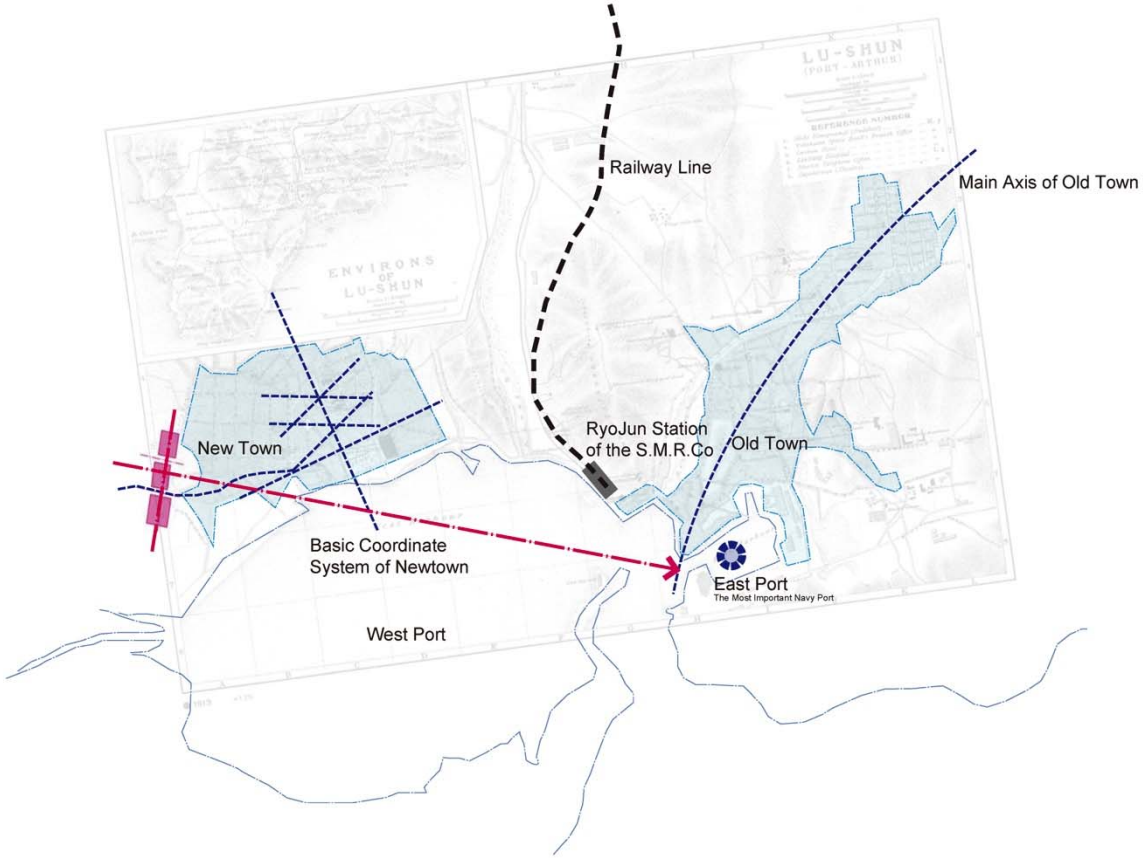


Figure 4-22-7 The Axis Analysis graphic of the Ryojun Western New Town

After the invasion by Japanese colonialists in 1905, the KANTOSHUMINSEISHO SHOMUBU (関東州民政署庶務部) controlled and planned the function and development of Ryojun city. From the analysis in the current found literature, they basically kept the old city of Ryojun unchanged with Russian city planning and reconstructed and retrofitted the Russian remained buildings for them.

In the analysis figure, the research also marks the relationship between the Ryojun College of Engineering and its urban surrounding. The extension of the axis of the main building (大学本館) on campus coincidently passed through the sea surface directing at the foundation of Ryojun city which is the east port, which is regarded as non-coincident relationship by the research, in spite of the lack of sufficient historical information to prove it. As this building was used for the Russian Navy, so the direction of the axis to the east port should be intentional. The government applied the same subsequent construction theory of the campus to the construction of the city. New buildings of the campus followed the axis of the reserved Russian style main building and evolved into a new parallel system and control every construction of the buildings. By analyzing the connection diagram, it can be seen that the new town connecting with the campus (the orange line) is curved which indicated that there is not close relations between the design of the campus and the existence of the Ryojun new town, excluding the echo relation between the direction of the campus and the east port.

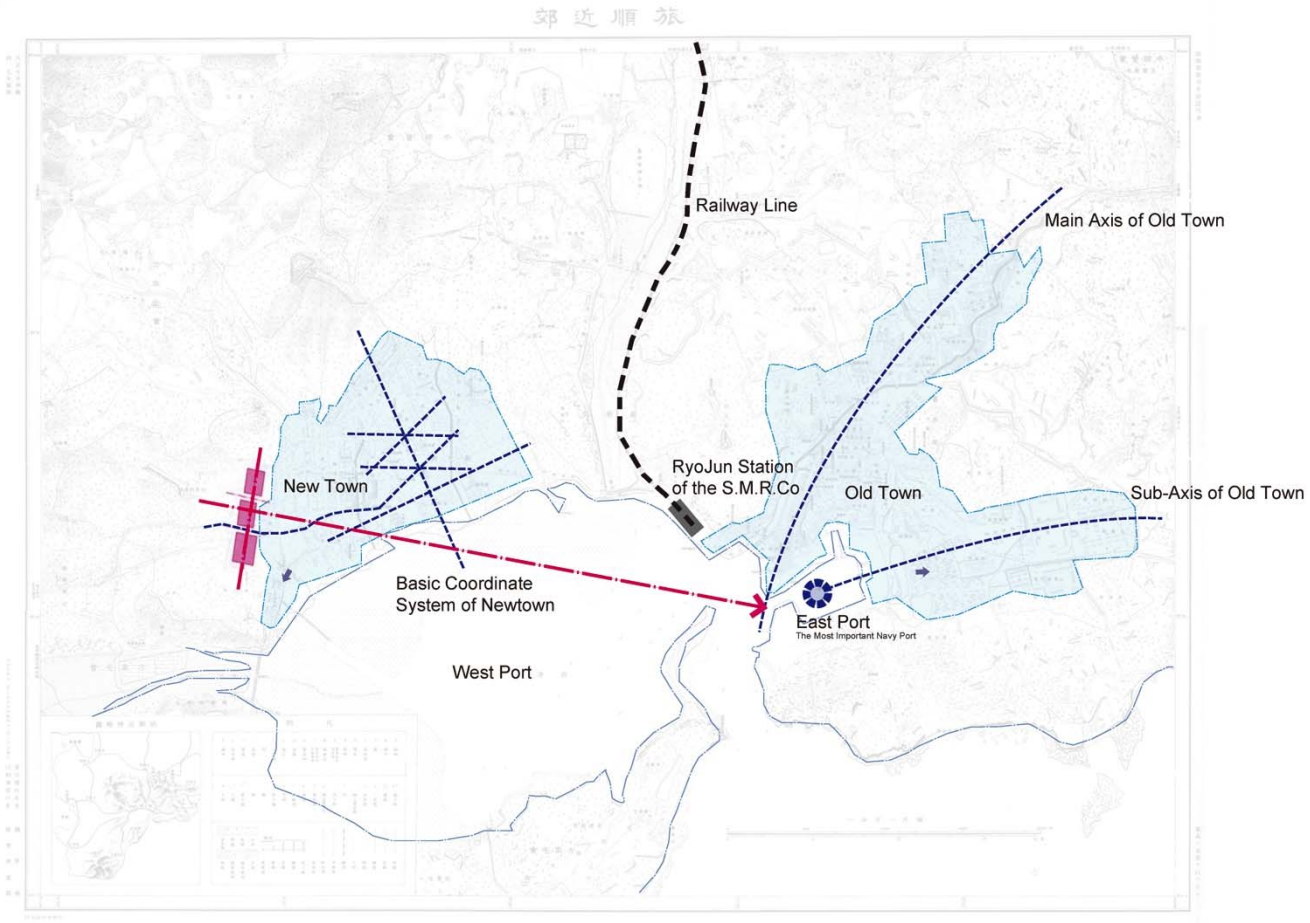
From the evolution relationships between the peripheral environment and the campus itself, the relative conservative of the construction in the city can be found. Based on maps over years, the research shows the analysis of the relationship between the college and the development of the city in the Figure 4-23.



地図：LU-SHUN Port-Arthur, 1913

引用：柏書房、「近代アジア・アフリカ都市地図集成1875―1940」、1996

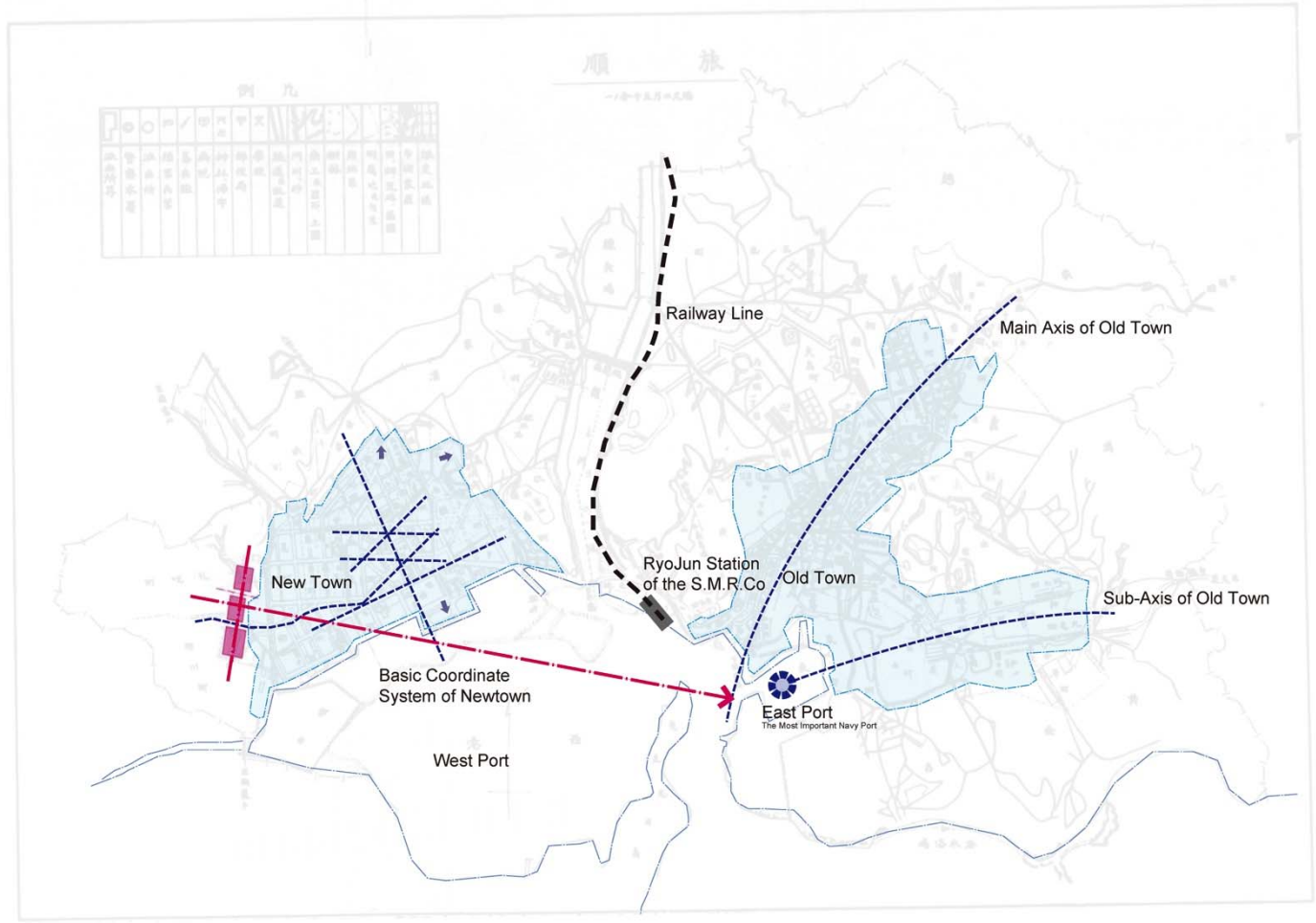
Figure 4-23-1 Analysis the relationship between the College and the Ryojun City in 1913



地図：旅順近郊, 1918

引用：柏書房、「近代中国都市地図集成」、1986

Figure 4-23-2 Analysis the relationship between the College and the Ryojun City in 1918



地図：旅順, 1929

引用：関東庁長官官房文書課、「関東庁管内行政区域表」 附圖、1929

Figure 4-23-3 Analysis the relationship between the College and the Ryojun City in 1929

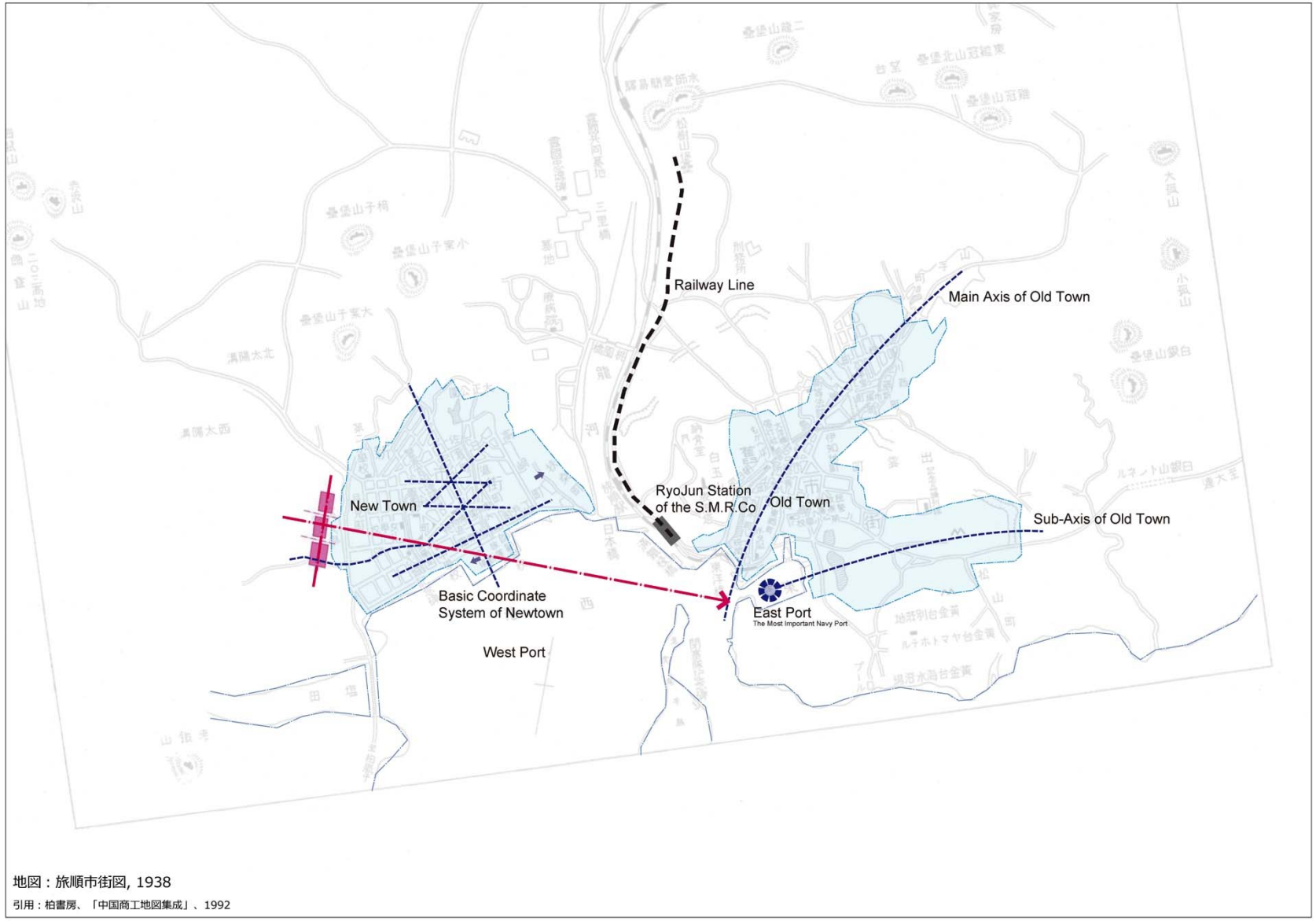


Figure 4-23-4 Analysis the relationship between the College and the Ryojun City in 1938

Through the analysis of the relationship between city and college in 1913, 1918, 1929 and 1938, it can be seen that the expansion on the new town side is very limited. The urban change around the campus is mainly showing up during 1913–1918. By comparing the constructed city range in 1913 and 1918, the research find that an open space originally existed between the campus and city in 1913 became the urban construction land use in 1918. Since then, because of the morphology of the campus, the expansion of the city ended here. Actually, until 1990s, there was still the borderline of Ryojun city.

Relative to the slow development of the new town, the development of the old city would be more obvious. Due to the construction of the Lvda South Road (旅大南路) that connection between Dalian and Ryojun, a new development axis of Old Town emerged. But the speed of urban sprawl is more rapid than the new town, after 1918, the pace of development of the old town has become very slow. The slow situation may be the normal rate of expansion of this city as a military port city. After all, this city was not used for economic development and urban life.

In the present analysis, it seems not clear about the impact on the campus by the city, but in fact, some changes have already occurred slowly in the constructed urban environment. If we pay attention to changes in the urban environment around the university land, its influence can still be found as the Figure 4-24 said. After the establishment of the school in 1909, in the range of 1 km around the school, beside the establishment of Ryojun second elementary school (旅顺第二小学校)[107] in 1908, another three schools also have been established within this range. They are: The first one built in 1910, retrofitting the original Russian-occupation-period Ryojun city hall for the Ryojun Higher Girls School (旅顺高等女学校)[108](Figure 4-25); The second one, established in 1916, reconstructing the original Russian-occupation-period Amrican-oriented store building for Ryojun Normal College and its affiliated school (旅顺師範学堂と附属公学堂)[109](Figure 4-26); The third one founded on March 26, 1909 and moved to Russian remained buildings in Oseko-machi (大迫町), it was the Ryojun Middle School (旅顺中学校)[110](Figure 4-27). Although this change in land-use is not obvious compared to the formation of the education land-use in Fushimi-dai in Dalian, the impact on the establishment of the educational facilities in the city after the construction of the campus can still be affirmative.

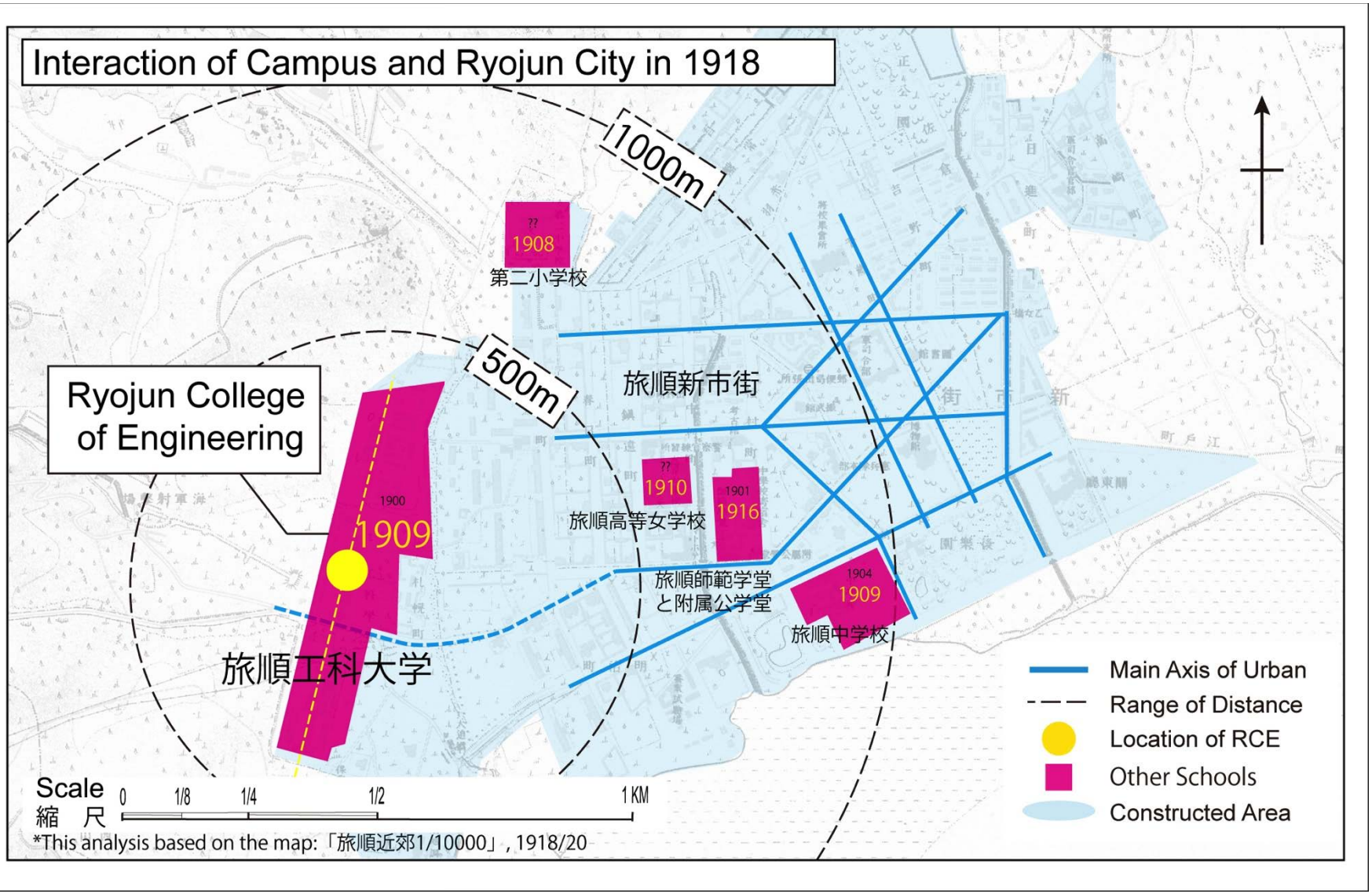


Figure 4-24 Interaction of Campus and Ryojun city

Figure 4-25 Photo of the Ryojun Higher Girls School

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

Figure 4-27 Photo of the Ryojun Middle School

4.2.5 Summary

There are a lot of unique features of Ryojun College of Engineering campus that was locating in a city originally used for a military port. The formation of the campus experiencing a retrofitting and reconstructing based on the original Russian remained architectures. Therefore, there are buildings in many various styles. While as the demands of the school functional needs, there existed mixed masonry structure, red brick building structures mixed structure, frame structure and steel structure in the campus. But also because of its special topography around the campus, the campus was naturally divided into three separate areas by rivers. These are the typical characteristics of this campus. Meanwhile, it also has some common features which are the same as the South Manchuria Industrial University, such as the '日' plane type building, the campus axis system showing a orthogonal relationship with the surrounding road, the zoning planning method for campus according to different functions and the iconic red-brick Japanese Colonial Architectural Style with the eclecticism features.

For the study of the relationship of interaction influence between the campus and the city, the research identifies that the choice of the orientation of the main building was influenced by the east port, which was the most important location for the Ryojun city. The research also considers that the establishment of the campus led to an attraction of the city expansion towards campus. But due to the nature of the city, terrain and other reasons, the spread of this city is limited to a certain range. As discussed in the section above, though urbanization in Ryojun was completed earlier, the city did not form the kind of school band surrounding universities which can be found in Dalian City Fushimi Station, at least some legacy building was converted into school sites. The relationship between the campus and its located surrounding environment is considered existance.

4.3 From South Manchuria Medical School to Manchuria Medical College

4.3.1 The First Medical School Belonged to Manchuria Railway Co.

The China Medical University (中国医科大学) and the First Affiliated Hospital of it located on No. 92 block, North Second Road, Heping District of Shenyang City in Liaoning Province. Here, was the original campus of the Manchuria Medical College (满洲医科大学), which was used from 1907 to 1945. In April 1907, after the Russo-Japanese War, the Dalian hospital that belonged to South Manchuria Railway Company founded a branch agency of the Dalian hospital in Houten (大連医院奉天出張所), based on original '日軍野战鉄道经理部奉天医務室'. The next year, it was renamed as the Dalian Hospital of Houten Branch (大連医院奉天分院) in October, due to the remote site and inconvenient of the original site, a new main building (医院本館)[111] and several other buildings for patients of the Houten Branch were built in one site which affiliated to Manchuria Railway company where the area was about 171000 square meters[112], located at the east of the Houten Central Avenue (中央大街), later renamed as the Chiyoda-Tori(千代田通), in the west of the Shotoku Avenue (昭德大街), , later renamed as the Naniwa-Machi(浪速町). Until August, 1909, all the mentioned buildings were completed and the hospital was converted into new site. This is the first construction on the campus site.

In May 1911, under the permission of the government, Manchuria Railway Company commenced the creation affairs of the South Manchuria Medical School, which was officially established on August 24th in the same year. According to the Imperial Ordinance No. 230(敕令第 230 号) '関于南满医学堂须遵循専門学校令之件', it nominated Kawanisi kenji (河西健次) who was the president of the Dalian hospital at that time as the president of the School, and elected the governor Zhao Erxun (東三省総督赵尔巽) as the Honorary President. According to the historical document '满洲医科大学二十五年史', the first enrollment of the school did in October 1911. 20 Japanese students were enrolled as the undergraduate students while 8 Chinese students were enrolled as the preparatory students for that mainly study Japanese language. Based on this, the South Manchuria Medical School accepted both Japanese and Chinese students at the beginning of the establishment, however the quantity and the entrance level were under big disparity. Furthermore, South Manchuria Medical School and Beijing Union Medical College signed an agreement to give help in teaching guide and so on. In short, the strong support of all parties, South Manchuria Medical School became the most powerful Medicine University in northeastern region.

In 1914, based on the permission to the school in line with 'Physical Law (医师法)' requirements by the Japanese ministry of education, the Japanese's student graduated from South Manchuria Medical School could obtain the medical license without sitting for the examinations. This policy was undoubtedly greatly enhancing the strength of this school. In the same year, the former Houten Hospital (奉天医院) was renamed as South Manchuria

Medical School Affiliated hospital (南満洲医学堂附属医院) with nurse training agency (看護養成所), which made this school be a specialized school with a complete health care education system. The SMMS (South Manchuria Medical School) was set to be a junior college with the qualification of College education at the beginning of the establishment, one level higher than South Manchuria Polytechnic School (SMPS) in high-school education level which established in the same time. SMPS reached this junior college level until it's upgrading to SMIC in 1922.

As this school had an important unshakable position and powerful reputation in Manchuria region, even in East Asia at that time, therefore, being a junior college is clearly inappropriate. By the chance of the new Daigaku-Rei (大学令) published in December, 1918 in the Imperial Ordinance No. 338 (敕令第 388 号), the Manchuria Railway Company and the government had an increasingly strong willing to upgrade it into a university. Their voice finally became the official application for the establishment of the Manchuria Medical College (満洲医科大学) pushing the upgrading onto the agenda. According to the Imperial Ordinance No. 162 (敕令第 162 号) in March of 1922, the government agreed the upgrading and official establishment of the college based on the Daigaku-Rei (大学令). In May of the same year, the Kantocho-Rei No.468 (関東庁令第 468 号) published that formally qualified the establishment of Manchuria Medical College. According to the organization diagram of its release (Figure 4-28), the college included undergraduate course (本科) for four years, the college preparatory course (大学予科) for three years and the special course (別科) in four years that was a course for the Chinese students, it was renamed as the Senmonbu (専門部) in 1925. As well as, there is affiliated preparatory school (附属予備科) for one year Japanese language course of the Chinese students who want to enter the undergraduate course or the preparatory course, and so on. In October of the same year, 57 Japanese preparatory students and 3 Chinese preparatory students, with 22 students affiliated preparatory school Chinese students were enrolled in the school. Meanwhile, the school also recruited two professors from the University of Tokyo and the Kyoto University launched a series of activities such as academic lectures, and held a grand opening ceremony. It is recorded in the '満洲医科大学史' and 1965's '満洲開発四十年史　備巻', until the school closed after Japan's defeat in 1945, during the 34 years, a total of Manchuria Medical cultivated about 2,680 physicians, about 300 pharmacists and about 1,000 nursing women.

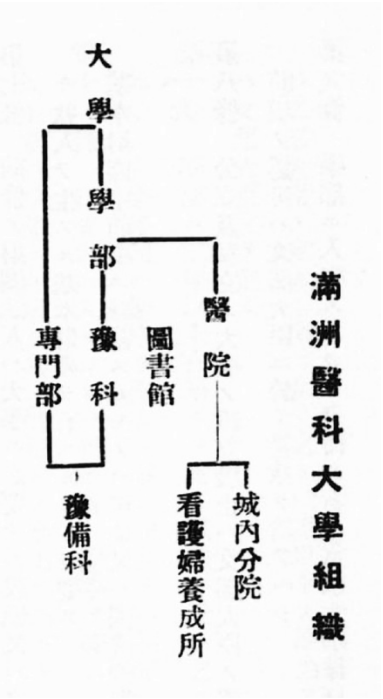


Figure 4-28 The Organization Diagram of the MMC in 1934

Among them, about 1,000 physicians (most of them graduated from the special course) and 70 pharmacists were Chinese.

After upgrading from SMMS to MMC (Manchuria Medical College), the majors of the college were consistently increasing. According to statistics by the historical documents, the College includes Anatomy, Physiology, Pharmacology, Medical Chemistry, Forensic Science, Health Science, Pathology, Parasitology, East Asian Medicine, Microbiology, Internal Medicine, Surgery, Obstetrics and Sciences, Pediatrics, Urology Skin, Ophthalmology, Otorhinolaryngology, Radiation Science, Spiritual Neuroscience, Odontology and other 20 professionals in total. For the hospital aspect, according to documents named the '昭和九年度地経営統計年報' of the local department of SMR.Co., the affiliated Hospital consists of two parts in1936, the main hospital and the old town branch. The main hospital contains 11 sections, a total of 730 beds, hospitalized about 17 million patients each year, outpatient patients more than 20 million. Although there were few Chinese patients, more than 80% were Japanese. This happens also to be expected, of course, the Houten city was the colony of Japan at that time[113].

Overall, during the 34 years development from its inception to its closing, the significant position of the MMC in the Manchuria region was unshakable. As one of the only two universities in this region, including Ryojun College of Engineering, it is significant to clarify and analyze of its campus construction progress as a typical case.

4.3.2 Site Plan and Buildings Transition under the Influence of School Upgraded

The Campus site and buildings' evolution progress of MMC are shown as the Table 4-4:

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

年分		名前	建坪(m2)	注
奉天医院時代	1907. 4	大連病院奉天出張所開設		
	1909. 8	大連医院奉天分院本館（后铁路总局分馆/地方事务所）と病舎三棟（五病棟を含む）	約 3655.00	奉天中央大街（富士町）に新築竣工
	1909. 10	气罐室一棟	約 710.69	竣工 後増築
	1910. 7	炊事場・浴室・屍室・給水所と周囲木柵	約 304.00	竣工
	1911. 10	貯氷室	?	竣工
	1912. 8	病舎二棟	約 980.00	竣工
	1913. 10	病舎二棟（六病棟を含む？）	約 1160.40	竣工
	1914. 06	外科臨床講堂一棟	約 579.00	竣工
	1914. 07	南満洲医学堂事務は新築本科教室内移転する		竣工
	1914. 09	伝染病棟一棟（仮）	約 421.00?	竣工
	1914. 10	内科臨床講堂、中央气罐室と瓦斯発生室	?	竣工
	1915. 05	炊事場一棟	?	竣工 元炊事場を看護婦食堂に改築する

年分		名前	建坪(m2)	注
	1915. 06	奉天医院を南満医学堂附属医院と改称		
	……	……	……	……
南満医学堂時代	1911.05	南満医学堂開設		
	1911.09	予科寄宿舎一棟（仮）	1160.00	竣工
	1911. 11	開校式		
	1912. 09	予科教室一棟	623.33	竣工
	1913. 07	本科寄宿舎一棟（中寮）	1228.33	竣工 1922 後改称予科寄宿舎中寮
	1913	六病棟	670.40	竣工
	1914. 06	本科教室栋(1922 改称大学本館)	約 3249.77	二階建物竣工
	1915. 05	警手室	約 25.00	竣工
	1915. 09	演武場 (1919.07 増築)	411.80	竣工 1915.11 健武場と命名
	1915	木工室	347.20	竣工
	1916. 07	庭球場二所		
	1916. 09	本科寄宿舎一棟（西寮）	753.33	竣工 改称予科寄宿舎西寮
	1916. 11	付属医院消毒室と浴室増築		増築
	1916	汚物焼却爐	約 4.00	竣工 小
	1917. 4	南満州医学堂予科を南満中学堂に附設させる		
	1917. 11	寄宿舎炊事場	約 727.00	増築 東寮一部
	1918. 05	看護婦寄宿舎	881.00	嚶鳴寮と命名
	1918. 11	動物飼養所	356.5	竣工
	1918	伝染病棟の一部	------	竣工 後,分病棟の一部になる
	1918	汚物焼却爐	74.25	竣工
	1919. 01	付属医院薬局	------	増築
	1919. 05	製骨所	32.40	竣工 骨晒場と命名
	1919. 06	付属医院第七病舎（精神病棟）	593.65	竣工
	1919. 06	付属医院第九病舎	?	竣工
	1919. 07	健武場増築	総 411.48	増築
	1919. 11	付属医院第十病舎（伝染病棟）	総 1808	竣工
	1920. 05	付属医院第十一病舎	?	竣工
	1920. 05	学堂敷地の東方 9266 坪拡張	------	
	1920. 10	前学長河西健次銅像設立		竣工
	1920. 11	解剖実習室一棟	約 336.00	竣工
	1920. 12	中央機関室	------	増築
	1920	本科教室棟南翼階下増築	451.00	増築
	1920	煙突 1	約 16.00	竣工
	1922. 03	満州医科大学設立		勅令 162
	1924. 03	南満中学堂附設南満医学堂予科大正十二年度限り之を廃止する		
	1926. 04	南満医学堂附設医院を満州医科大学附設医院に変更する		
満州医	1922.03	満州医科大学設立		勅令 162
	1922.08	大学予科校舎新築に着手する		医学堂東方筑波町十一番地

年分		名前	建坪(m2)	注
科大学時代	1922	舊霊室	58.08	竣工
	1922	大学本館三、四階一部増築	------	増築
	1923.09	大学予科校舎一部落成	------	南側
	1923.12	構内寄宿舎一部落成	------	東棟一部?
	1923	特種動物室	34.60	竣工
	1924	大学予科本館	1722.00	竣工
	1924	大学本館左後三、四層増築	------	増築
	1924	元本科寄宿舎が予科寄宿舎に変更後,寄宿舎東棟増築	総 3319.32 (東と中と西)	予科寄宿舎が竣工
	1924	精神病棟増築	総 1045.70	増築
	1924	霊室	141.42	竣工
	1924	看護婦寄宿舎北翼増築	------	増築
	1925	炊事と食堂	767	竣工 1929 改築
	1925	大学本館右後三、四層増築	------	増築
	1926	大学本館南翼階上増築	------	増築
	1927. 10. 23	大学寄宿舎新築	1201	竣工 筑波町六番地に 7050 平方米土地
	1927	煙突２	約 16.00	竣工
	1927/1928.02	外来診療所 1928.02 診療開始	3812.00	竣工
	1927/1928.11	体育館	727.70	竣工
	1928	消毒室	108.00	竣工
	1928	温室	84.00	竣工
	1929. 11	記念館 後増築	523.69	竣工
	1929	食堂及炊事改築	1133.5	改築竣工
	1929	満人宿舎１	285.04	竣工
	1929	満人宿舎２	118.80	竣工
	1929	大学本館北翼階下増築	約 158.00	増築
	1929	大学予科温室	36.25	竣工
	1930	大学本館北翼階上増築	------	増築
	1930	自動車庫	65.00	竣工
	1930	試験動物室	238.96	竣工
	1930	看護婦寄宿舎南翼増築	------	増築
	1931. 07	新病棟 (元病舎の一部を取り壊し)	2830.63	竣工
	1931	試験家屋（衛生 S)	53.22	竣工
	1933/34	スドーカー改築	?	改築
	1934. 07	朝日町新伝染病棟	4183.02	竣工 非構内 元伝染病棟が分病棟に変更
	1934/1935	看護婦寄宿舎後ろ増築	総 1518.93	増築
	1935	講堂と図書館	1817.41	竣工
	……	……	……	……

a. Transform and expansion of the Campus site

From the establishment of the South Manchuria Medical School in 1911 to the close the school in 1945, during the 34-years, some changes of the campus site area occurred. In 1911, when the school began a series of buildings and residential construction work in about

171,000 meters[114] of flat land which originally belonged to Houten Hospital. The southern side of the site was used as the school function, as the northern side for the hospital's construction. According to the situation described in the map of 'FENG-TIEN 1913' [115] (Figure 4-29), as the first building in the Houten Great Square (奉天大広場), the surroundings of it had yet to be developed and constructed. The main building of the hospital (医院本館) and the main building of the school (大学本館) stranded in the school site alone, overlooking the Army houses on the north side and the new Mukden parking or called the Houten Station (奉天停車場) in the west side. To a certain extent, the construction of the Houten Hospital and the SMMS has played a tractor role in the urban development. This effect was confirmed in the 1915 city map, named the '奉天附属平面図' [116] (Figure 4-30). Only in this two years, from both sides of the Shotoku Avenue (昭徳大街) where between the Houten Station and the Houten Large Square, a large number of buildings were constructed. Due to this, the Shotoku Avenue (昭徳大街) was becoming the most prosperous commercial street in the city.

After about nine years of construction and development, and school sites become increasingly tense. In May 1920, the school campus enlarged itself to eastward of the site, about 9,266 Tsubo (坪)[117] that is approximately 30,886.67 square meters land to be allocated to the construction of the scope of the school. This is the first and biggest change occurred on campus sites.

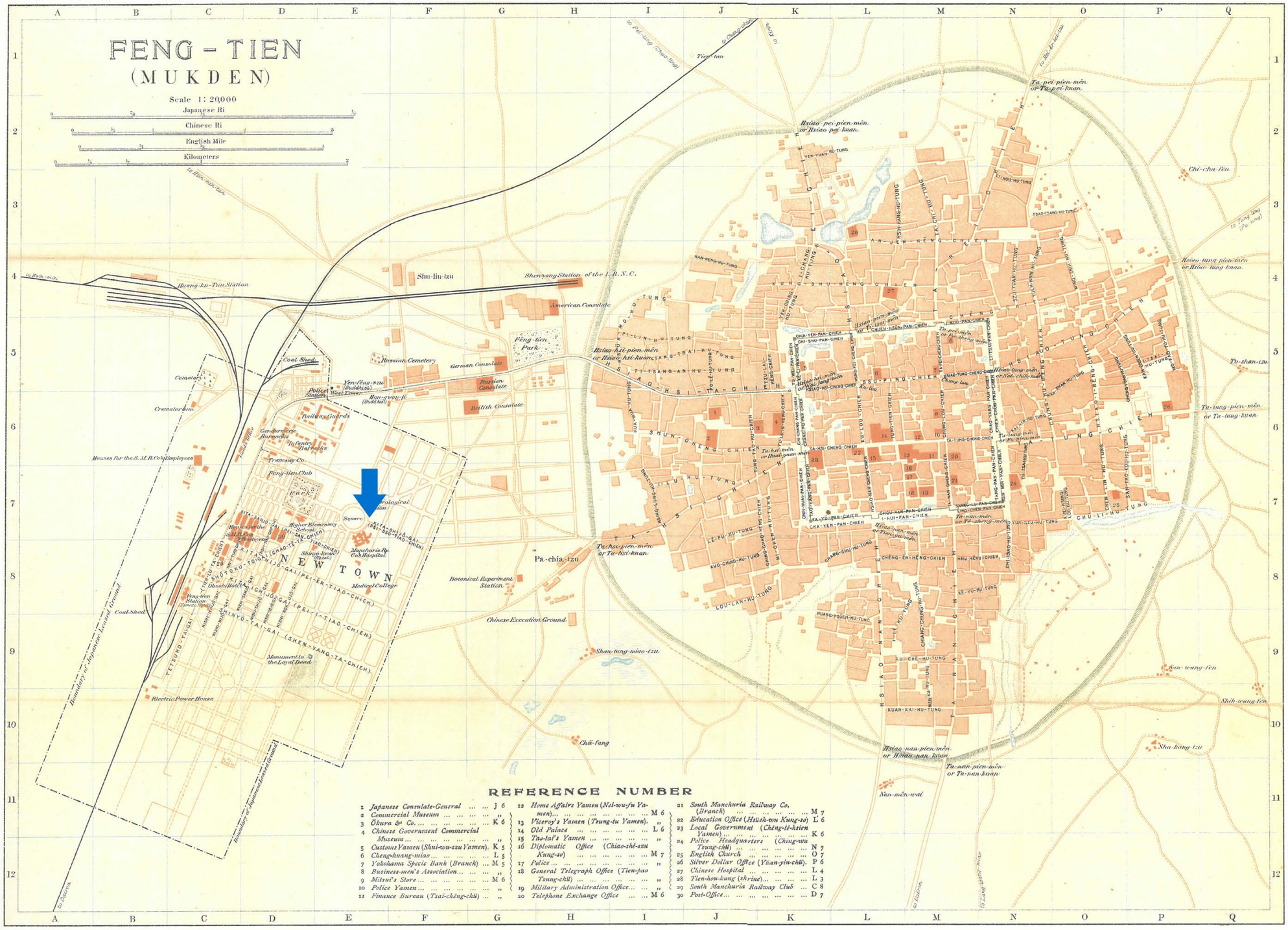
Then in 1922, the SMMS upgraded to the MMC, the enrolment number with greater growth than before. Therefore in 1927, approved by the Government, the college requisitioned a part of land where located in the Asahi-machi 2 Chome (朝日町２丁目) across the stress from the school at the southeast direction of the original campus. And the large of it was 7,050 square meters[118], suitably was used as the new undergraduate student's dorm (新本科宿舎). This was the second increase of college site.

The third change in College land use seems rather vague on historical records. In the historical document '満鉄附属地経営沿革史', it just clearly documented that until 1936, the college campus site across the Fuji-Machi (富士町) and the Shinano-Machi (信濃町), with a total area of 200,997.51 square meters of land, and constructions were covering a total floor area of 29,016.52 square meters. In addition, this date does not include site area of the Affiliated Hospital city branch, as well as the 45,829.2 square meters of land that was used for the new infectious disease hospital was constructed in 1934 and located on the No.57 of Asahi-machi (朝日町５７号). About this site reduction reasons, the research speculate that: Since the original hospital was used as Houten Railway Administration Main Office (奉天鉄道総局), presumably around 1931). In addition to the new Subsidiary Ward Building (附属医院院新病棟), resulting in amount of college land near the Houten Large Square was allocated out of the campus.

The conclusion above is based on the map records for each year of Houten and related historical records belongs to the SMR.Co.from entitled 'Houten' [119] map published in March 1931 (Figure 4-31), and the previous versions of the map in each year, the research found

that the scope of campus site was only marked by ‘ the Houten hospital affiliated to Manchuria Medical College (満洲医科大学附属奉天医院)’ and the ‘Manchuria Medical College (満洲医科大学)’, unlabeled others. From the entitled ‘奉天附属地平面図’ [120] map which was drawn in 1932, published in 1937, the original main building of Houten Hospital (元医院本館) was marked as ‘鉄道総局’. In addition, because the original 1-floor ward buildings (病棟の一部) behind the original building (元医院本館) was dismantled and reconstructed as the New Ward Building (新病棟) in 1931 and some relative records in the historical document ‘満鉄四十年史’, the research conclude that the original hospital main building was reused as the ‘鉄道総局’ in 1931. The name of ‘鉄道総局’ is also recorded in the ‘満洲医科大学構内配置图’ in 1934[121] (Figure 4-32). Moreover, this name was used until to the map ‘奉天市街图’, which published in September,1936[122] (Figure 4-33). The label of ‘鉄道総局’ is changed to the ‘地方事務所’ in the map of Houten, namely ‘奉天’ that measured in 1936 and pubilsed in 1939. Certainly the label of ‘地方事務所’ is used in all the later version maps before 1945. Unfortunately, there is not found any official and accurate records about this change in the college historical documents, except, a photo named ‘旧医院本館’ (Figure 4-34) is published in the historical document ‘満洲医科大学二十五年史’ as one of the attached pictures in January, 1936.

引用：柏書房、『近代アジア・アフリカ都市地図集成1875-1940』附図、1996



㉖ 1913

×1.1

Figure 4-29 FENG-TEIN 191

引用：南満洲鉄道株式会社、『南満洲鉄道株式会社十年史』附図、大正八年五月

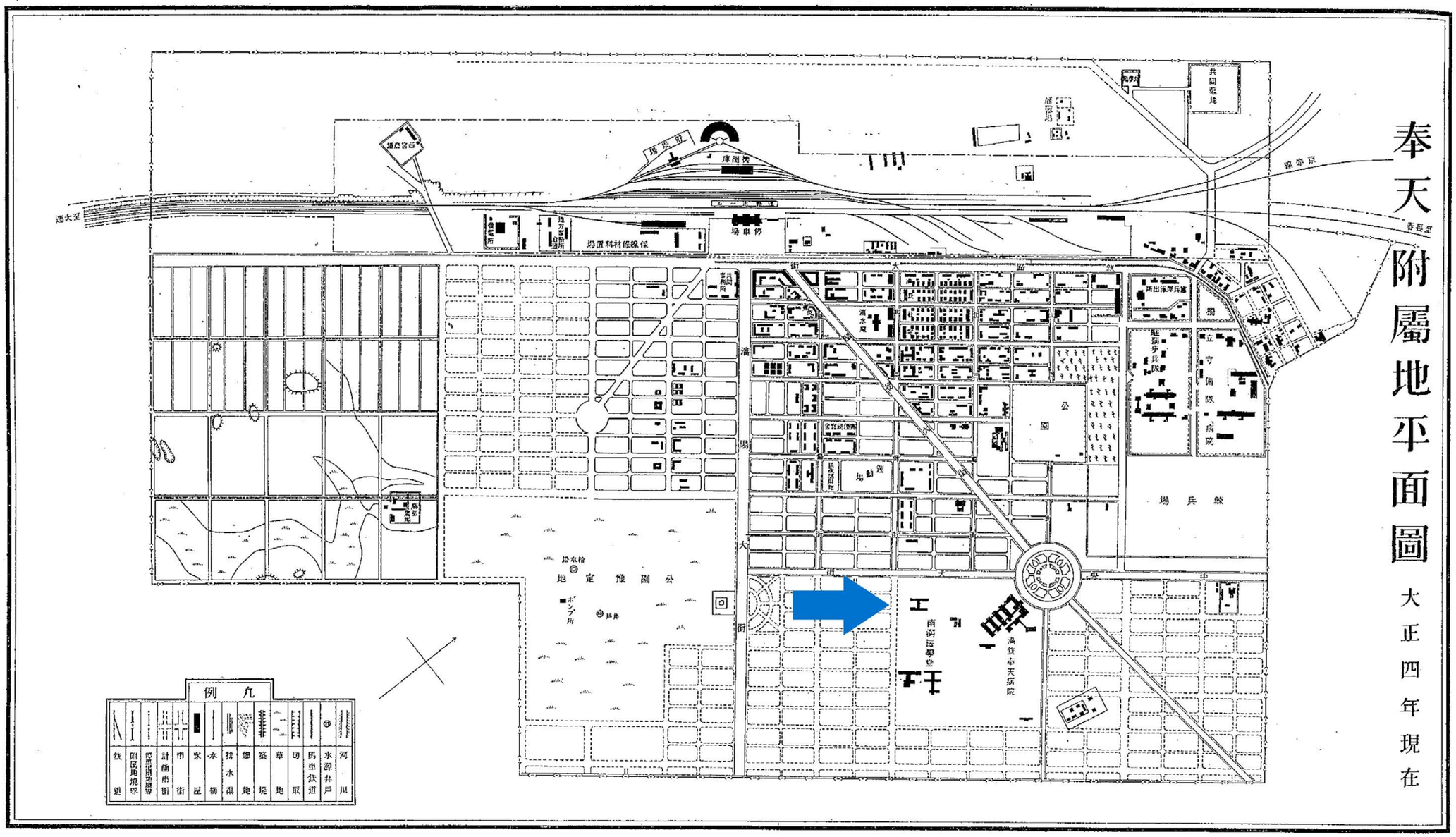
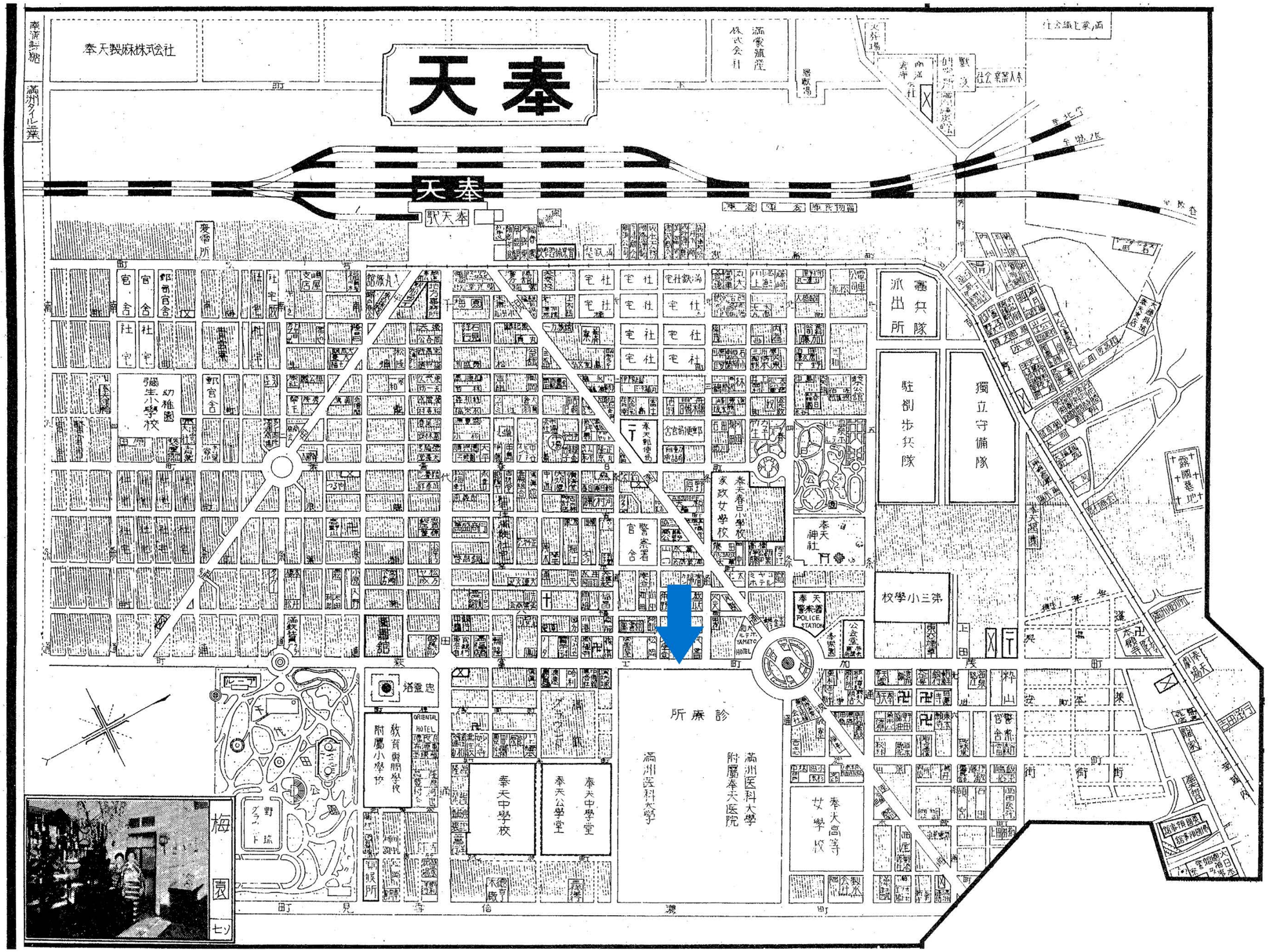


Figure 4-30 Map of the '奉天附属平面_' in 1915



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引用：柏書房、「中国商工地図集成」、1992

Figure 4-31 HOUTEN 1931

Figure 4-32 The Campus Site Plan in 1934

引用：科学書院、中国大陸二万五千分の地図集成、1993

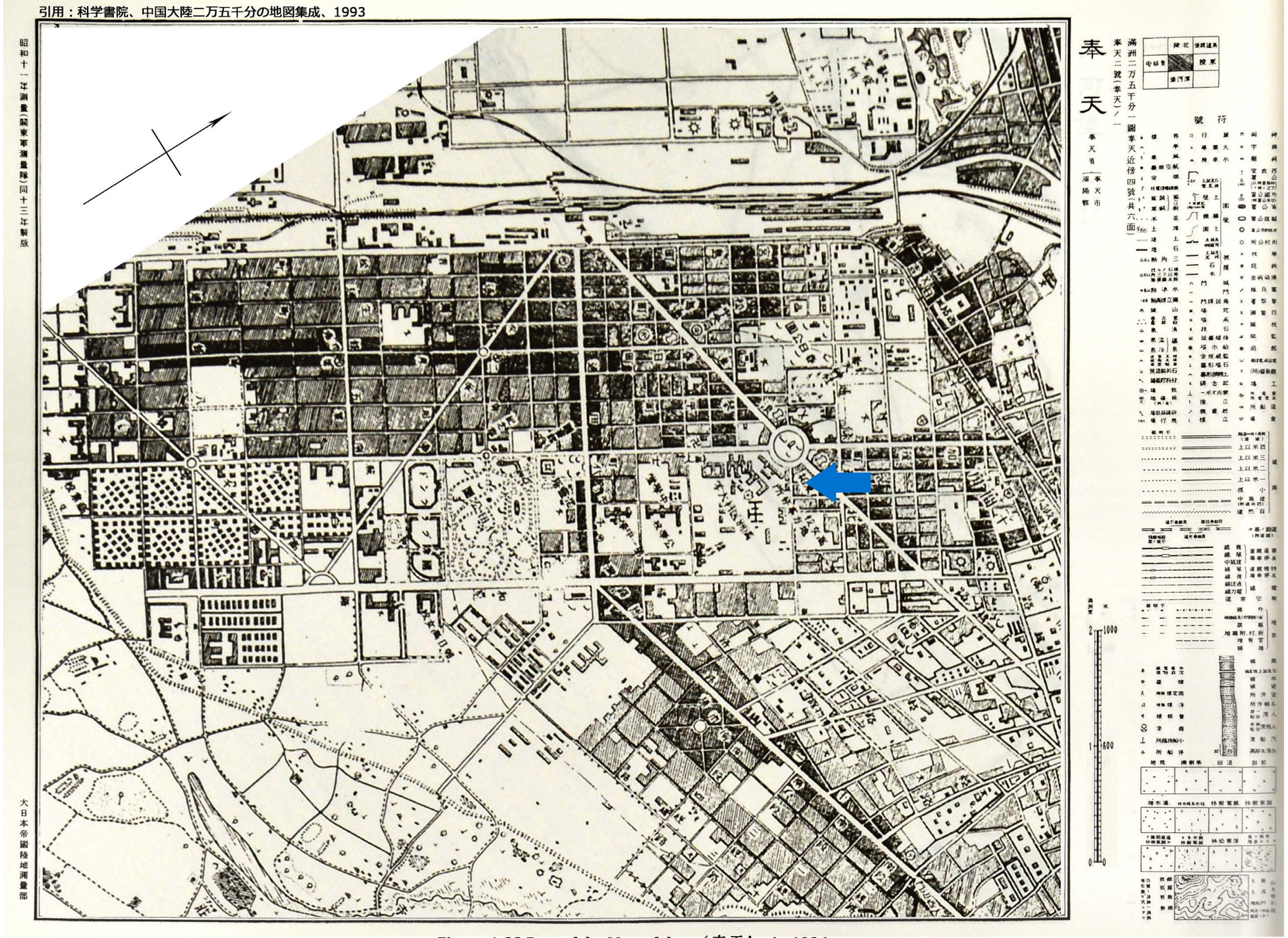


Figure 4-33 Part of the Map of the ‘奉天’ in 1936

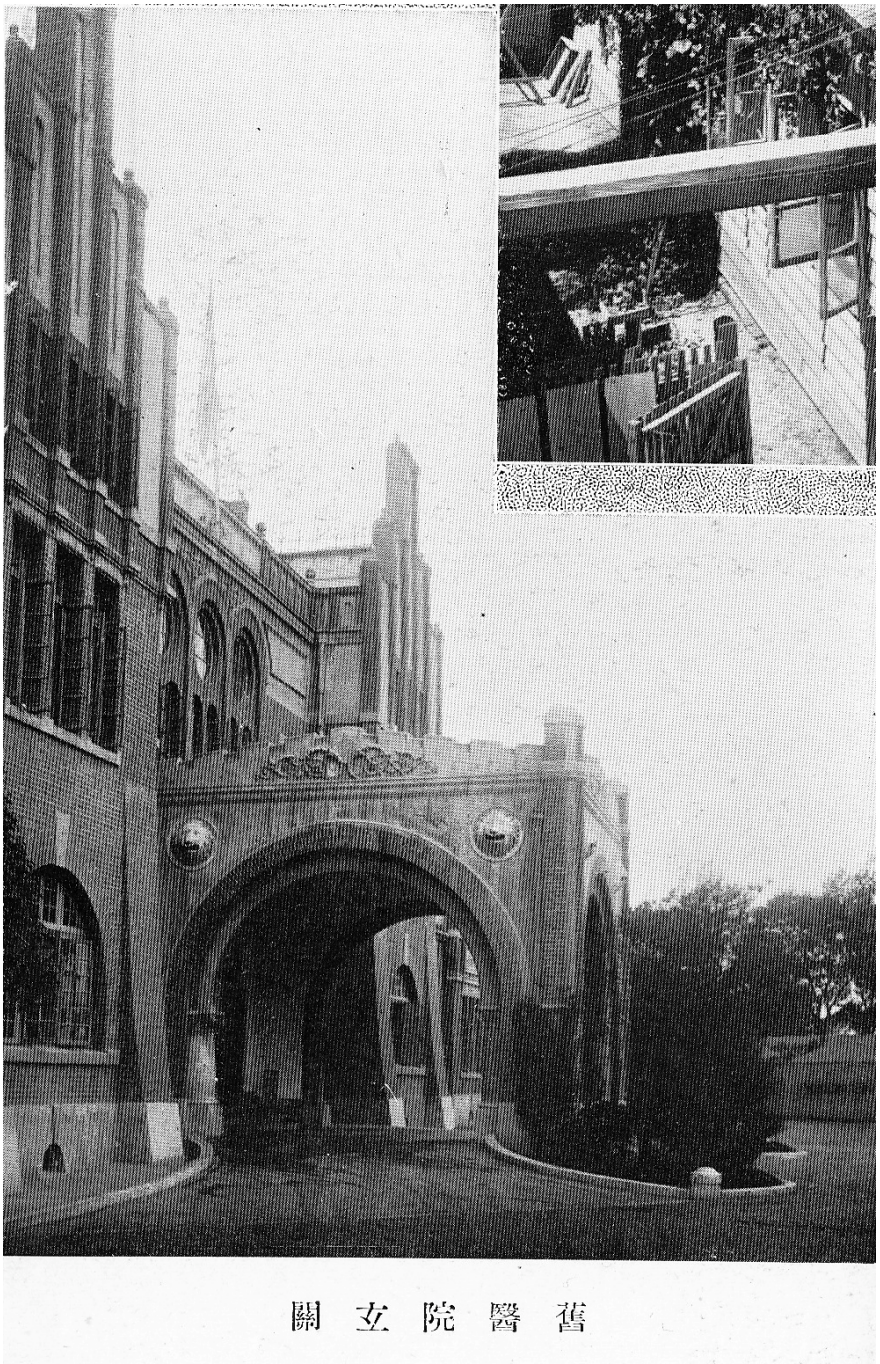
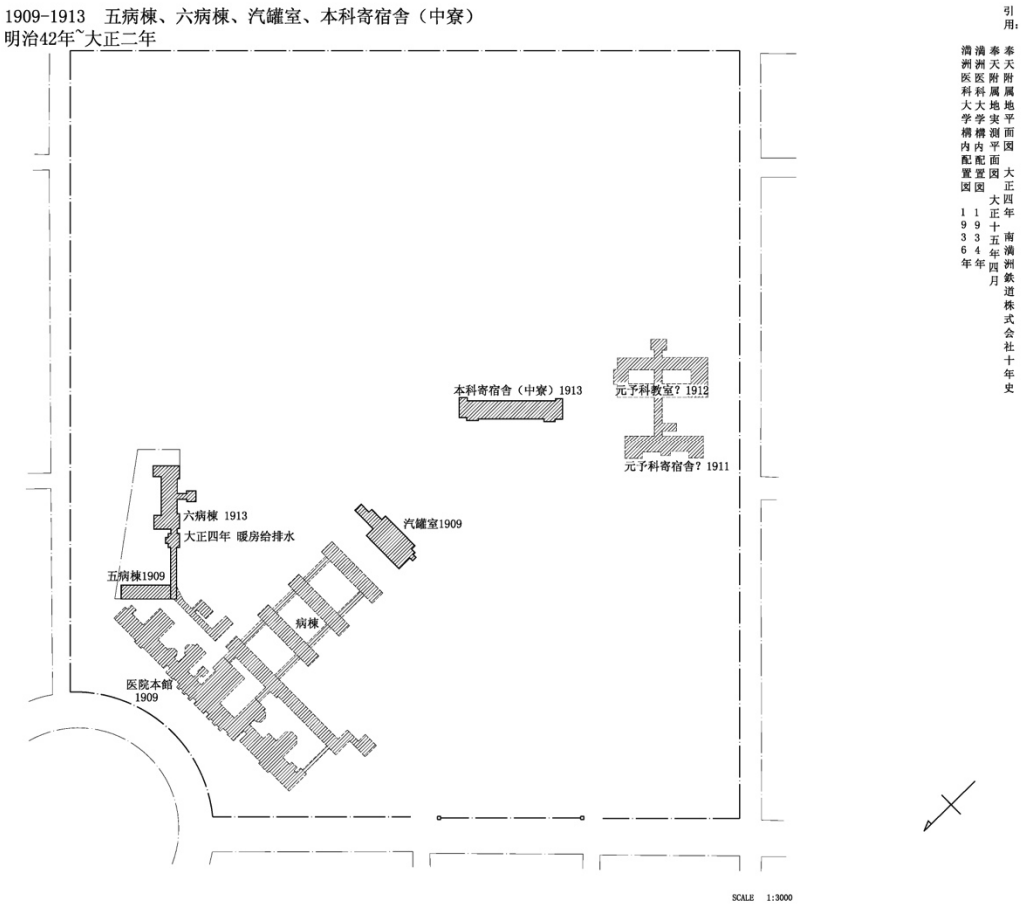


Figure 4-34 Record of the Photo as ‘旧医院本館’

b. New construction and demolition[123]

According to records and other historical documents as well as the ‘満州医科大学構内配置図’ in 1934 and the ‘満州医科大学構内配置図’ in 1936, the research retraced and recovered the annul changes of the Manchuria Medical College Campus site plan shown as the Figure 4-35.



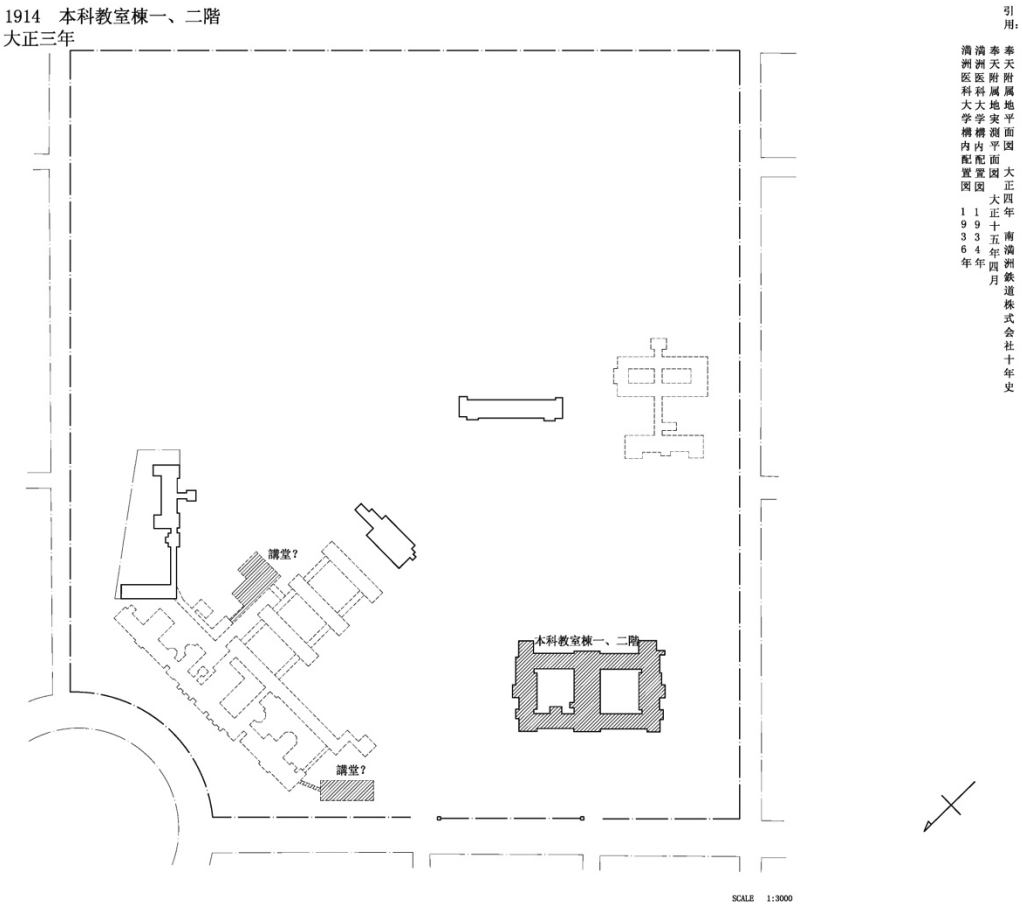
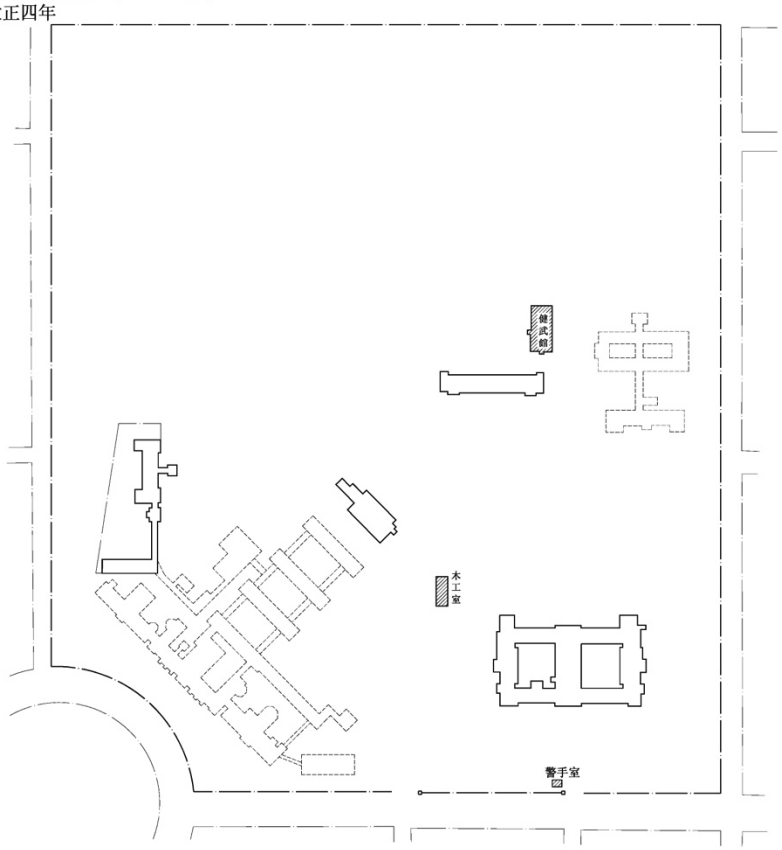


Figure 4-35-1 Transition Progress of the MMC Campus

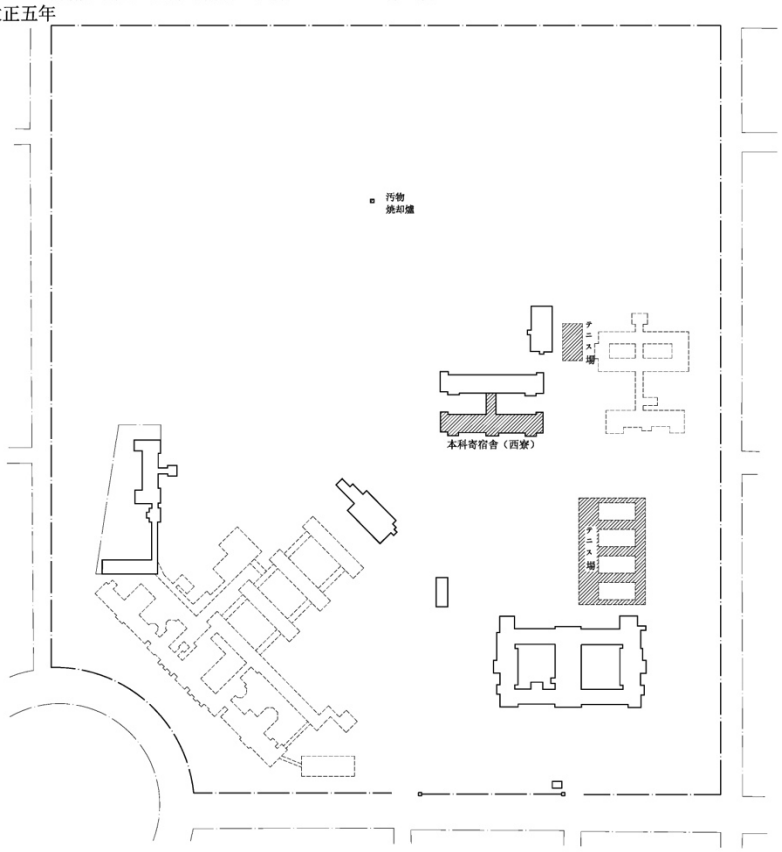
1915　健武館、木工室、警手室
大正四年



引用：奉天附属地平面図　大正四年　南満洲鉄道株式会社十年史
奉天附属地実測平面図　大正十五年四月
満洲医科大学構内配置図　1934年
満洲医科大学構内配置図　1936年

SCALE　1:3000

1916　汚物焼却爐、予科寄宿舎（西寮）、テニス場二所
大正五年

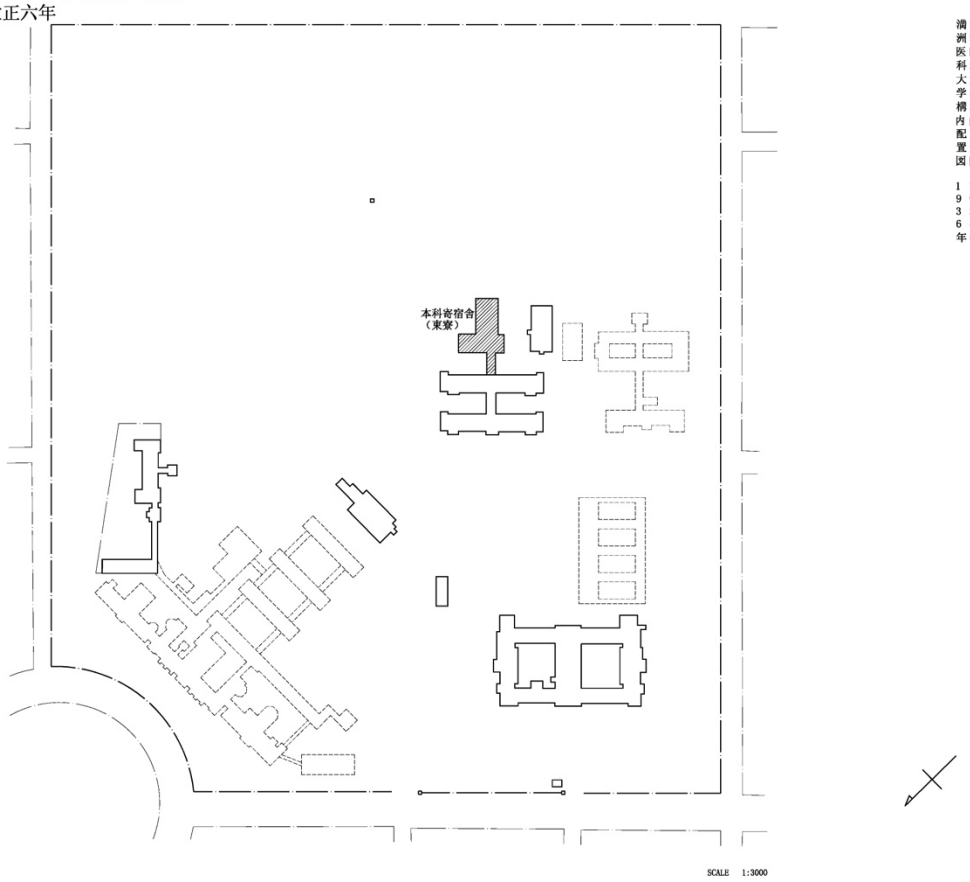


引用：奉天附属地実測平面図　大正十五年四月
満洲医科大学構内配置図　1934年
満洲医科大学構内配置図　1936年

SCALE　1:3000

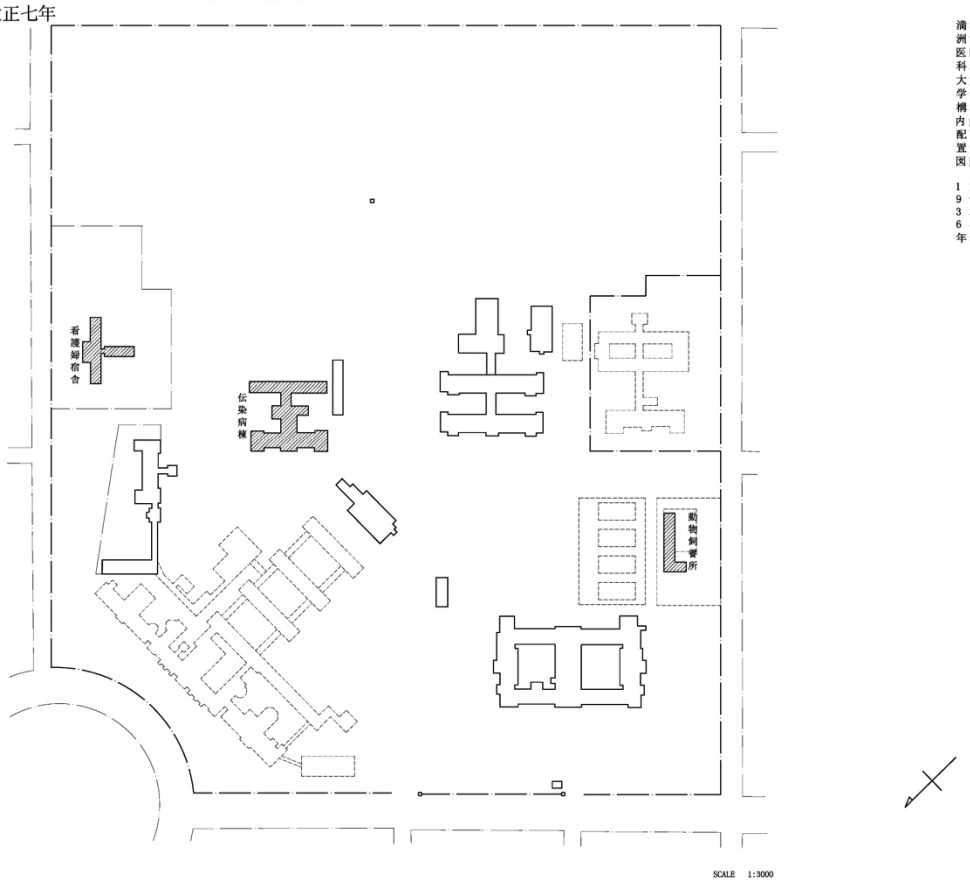
Figure 4-35-2 Transition Progress of the MMC Campus

1917　本科寄宿舎（東寮）
大正六年



引用：奉天附属地実測平面図　大正十五年四月
満洲医科大学構内配置図　1934年
満洲医科大学構内配置図　1936年

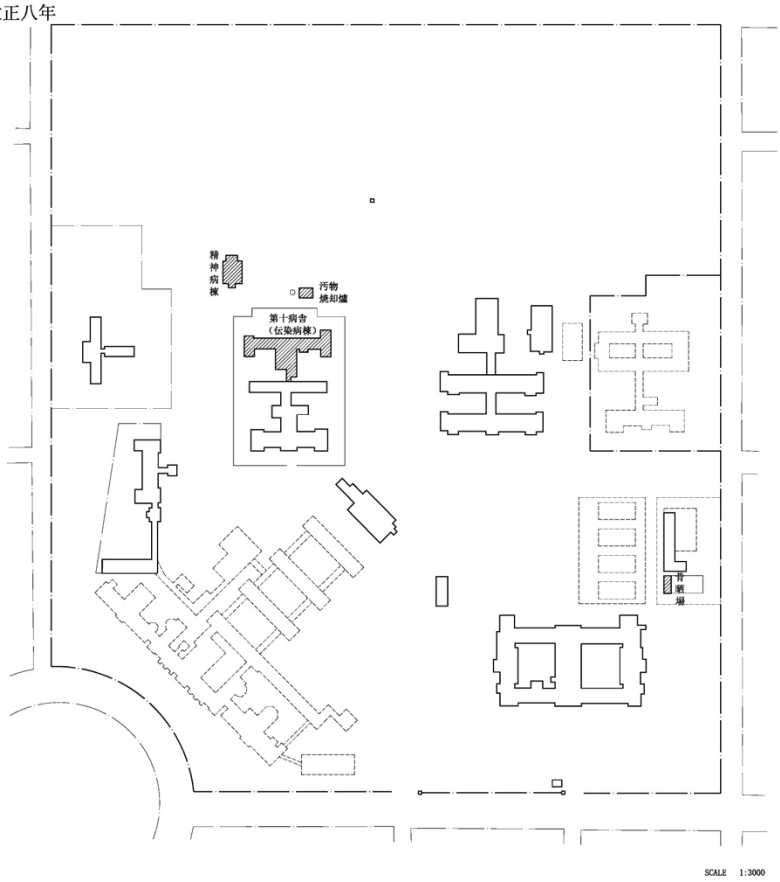
1918　動物飼養所、伝染病棟、看護婦宿舎
大正七年



引用：奉天附属地実測平面図　大正十五年四月
満洲医科大学構内配置図　1934年
満洲医科大学構内配置図　1936年

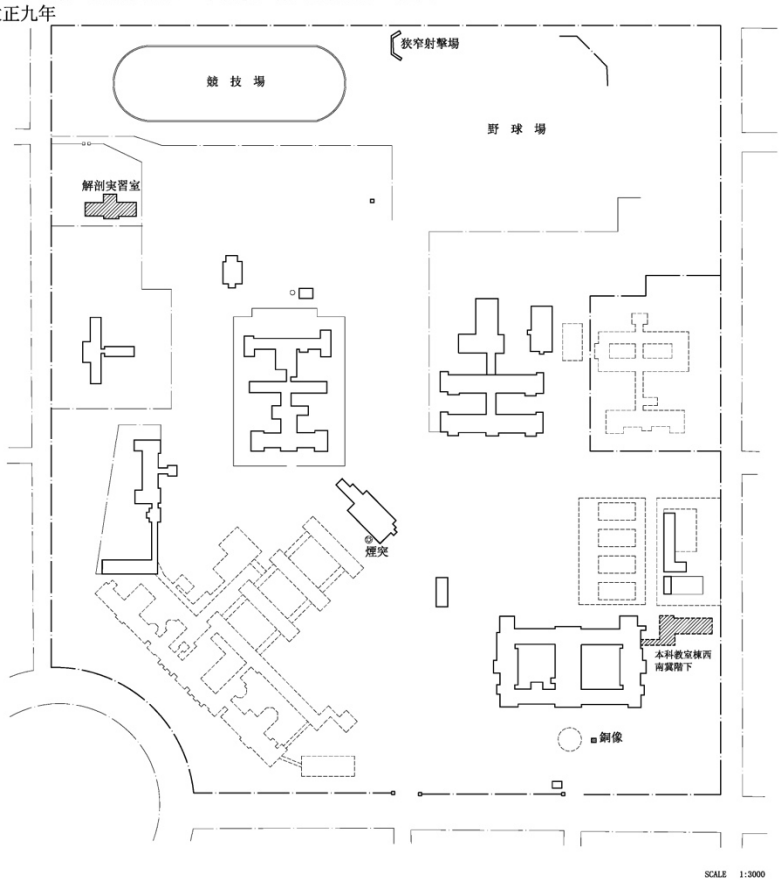
Figure 4-35-3 Transition Progress of the MMC Campus

1919　骨晒場、第十病舎（伝染病棟）、精神病棟、汚物焼却爐
大正八年



引用：奉天附属地実測平面図　大正十五年四月
滿洲医科大学構内配置図　1934年
滿洲医科大学構内配置図　1936年

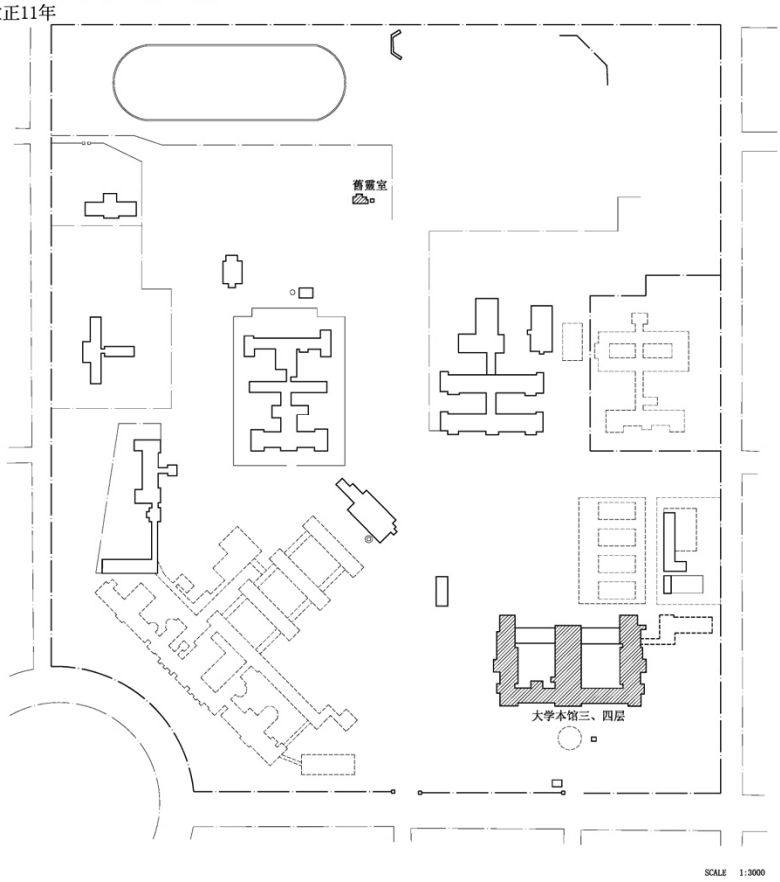
1920　銅像、解剖実習室、本科教室棟西南翼階下、煙突
大正九年



引用：奉天附属地実測平面図　大正十五年四月
滿洲医科大学構内配置図　1934年
滿洲医科大学構内配置図　1936年

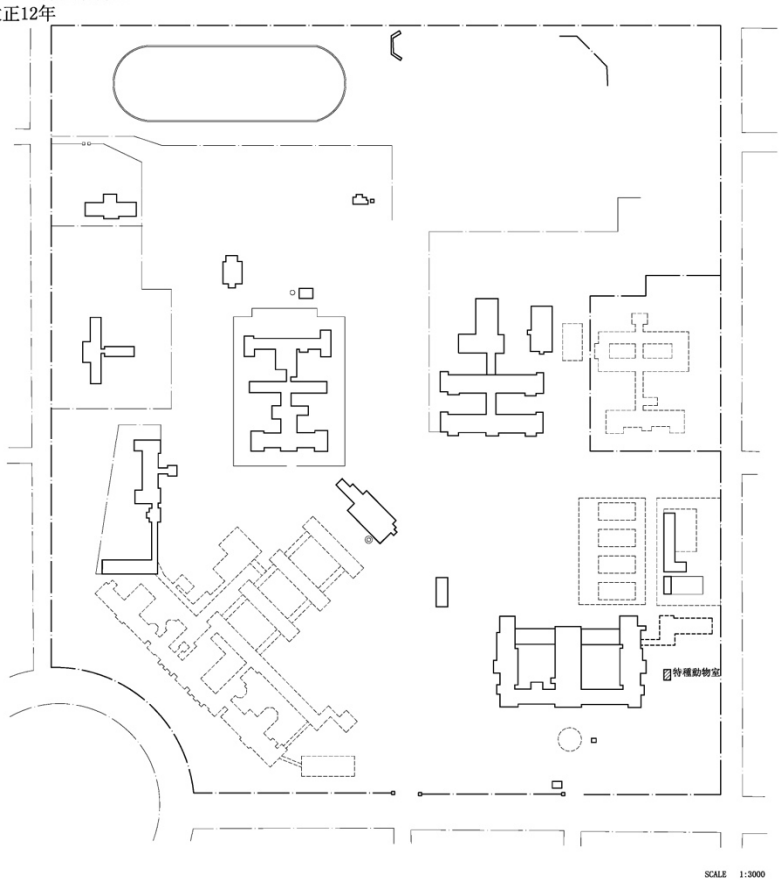
Figure 4-35-4 Transition Progress of the MMC Campus

1922　大学本館3、4階、舊靈室
大正11年



引用：奉天附属地実測平面図　大正十五年四月
滿洲医科大学構内配置図　1934年
滿洲医科大学構内配置図　1936年

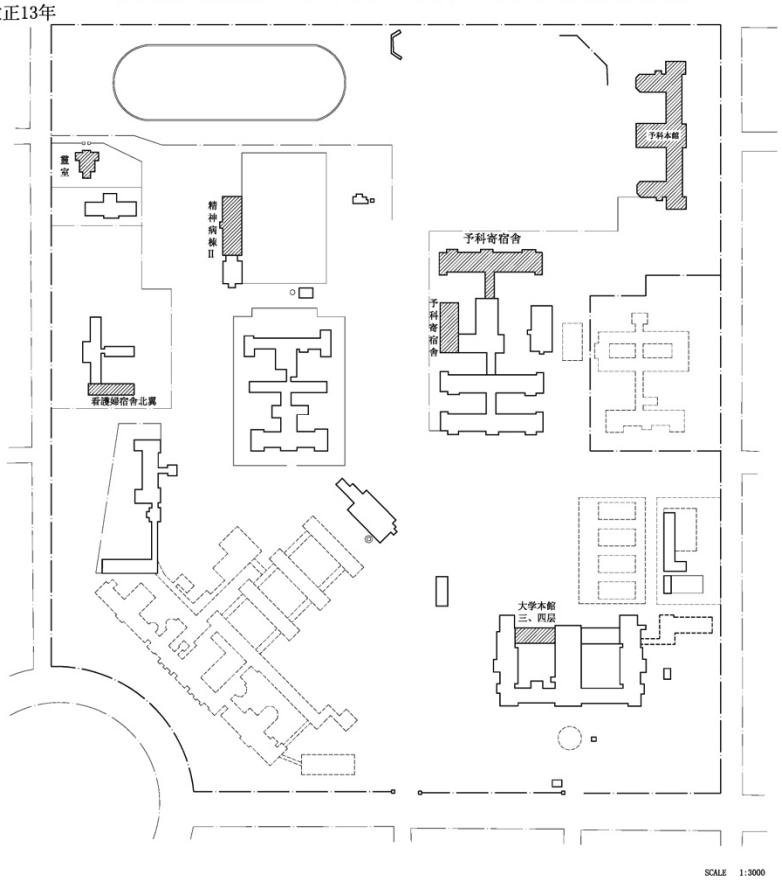
1923　特種動物室
大正12年



引用：奉天附属地実測平面図　大正十五年四月
滿洲医科大学構内配置図　1934年
滿洲医科大学構内配置図　1936年

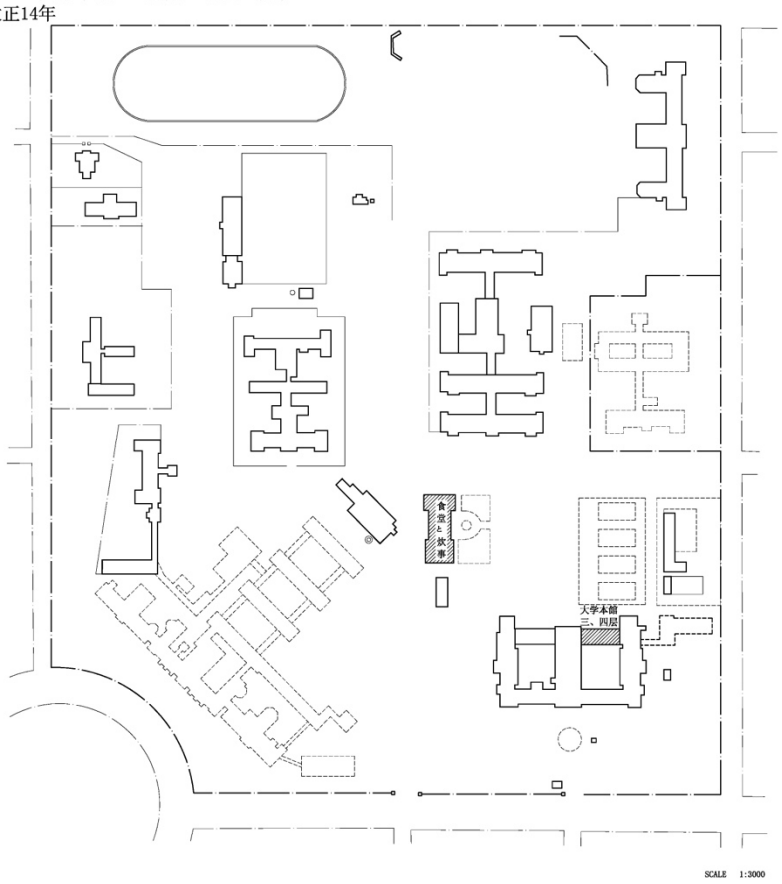
Figure 4-35-5 Transition Progress of the MMC Campus

1924　霊室、予科寄宿舎、精神病棟Ⅱ、大学本館三、四层、予科本館、看護婦宿舎北翼
大正13年



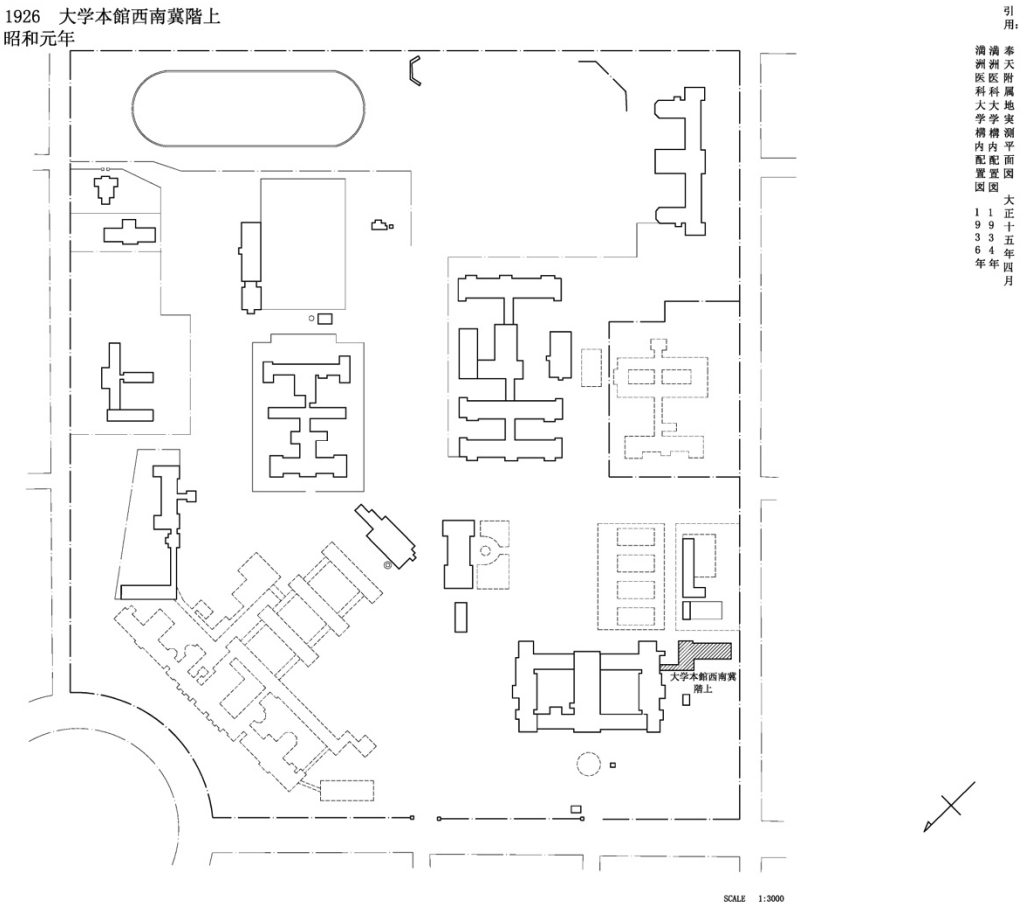
引用：奉天附属地実測平面図　大正十五年四月
満洲医科大学構内配置図　1934年
満洲医科大学構内配置図　1936年

1925　大学本館三、四层、食堂と炊事
大正14年



引用：奉天附属地実測平面図　大正十五年四月
満洲医科大学構内配置図　1934年
満洲医科大学構内配置図　1936年

Figure 4-35-6 Transition Progress of the MMC Campus



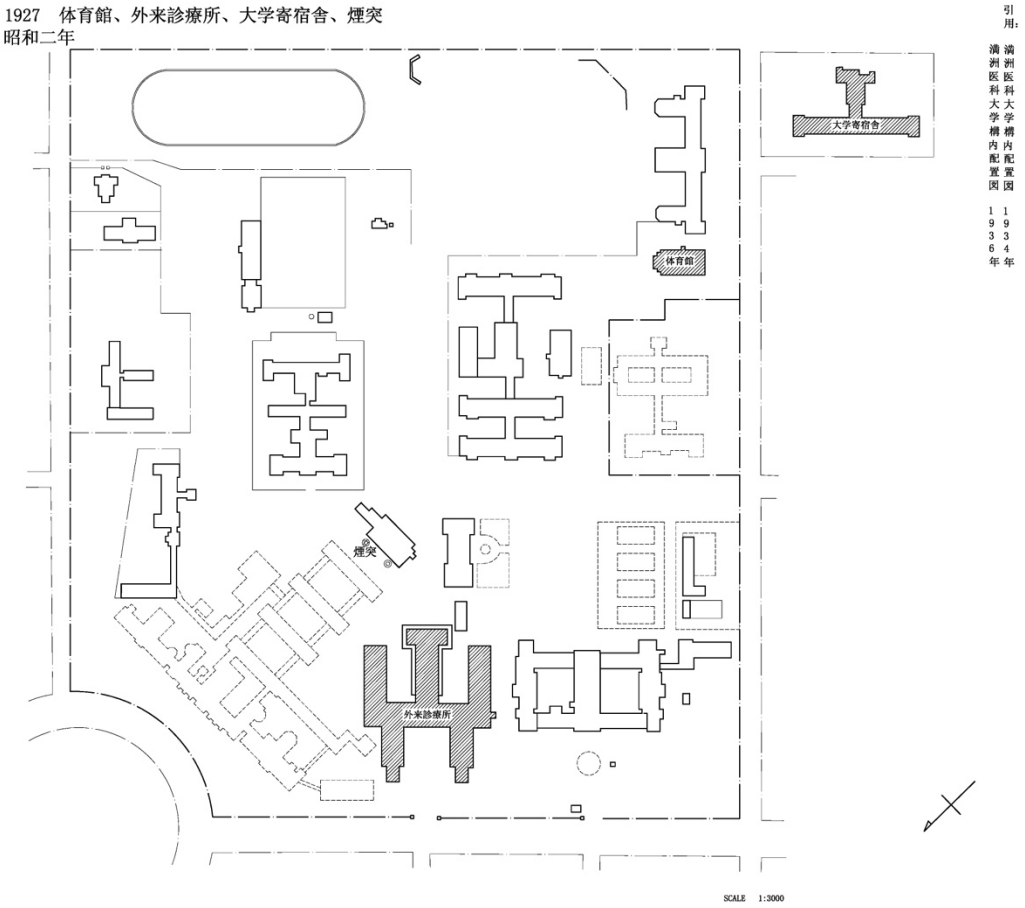
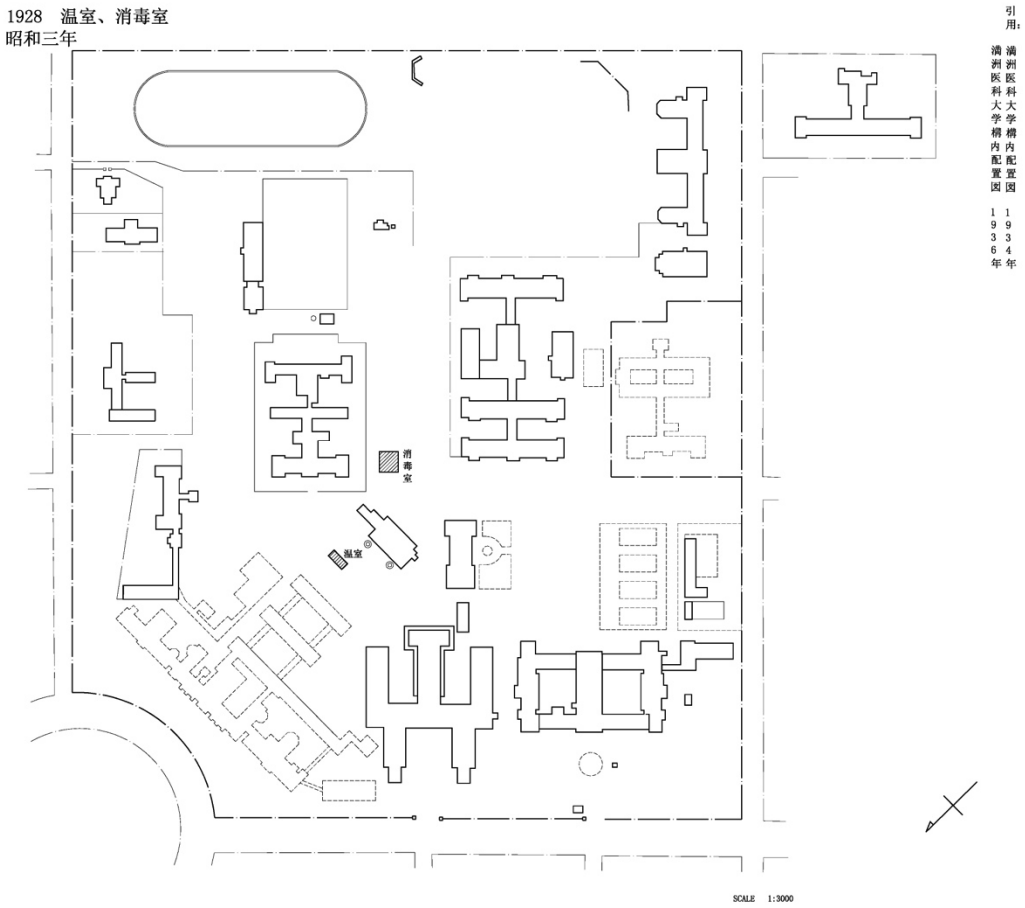


Figure 4-35-7 Transition Progress of the MMC Campus



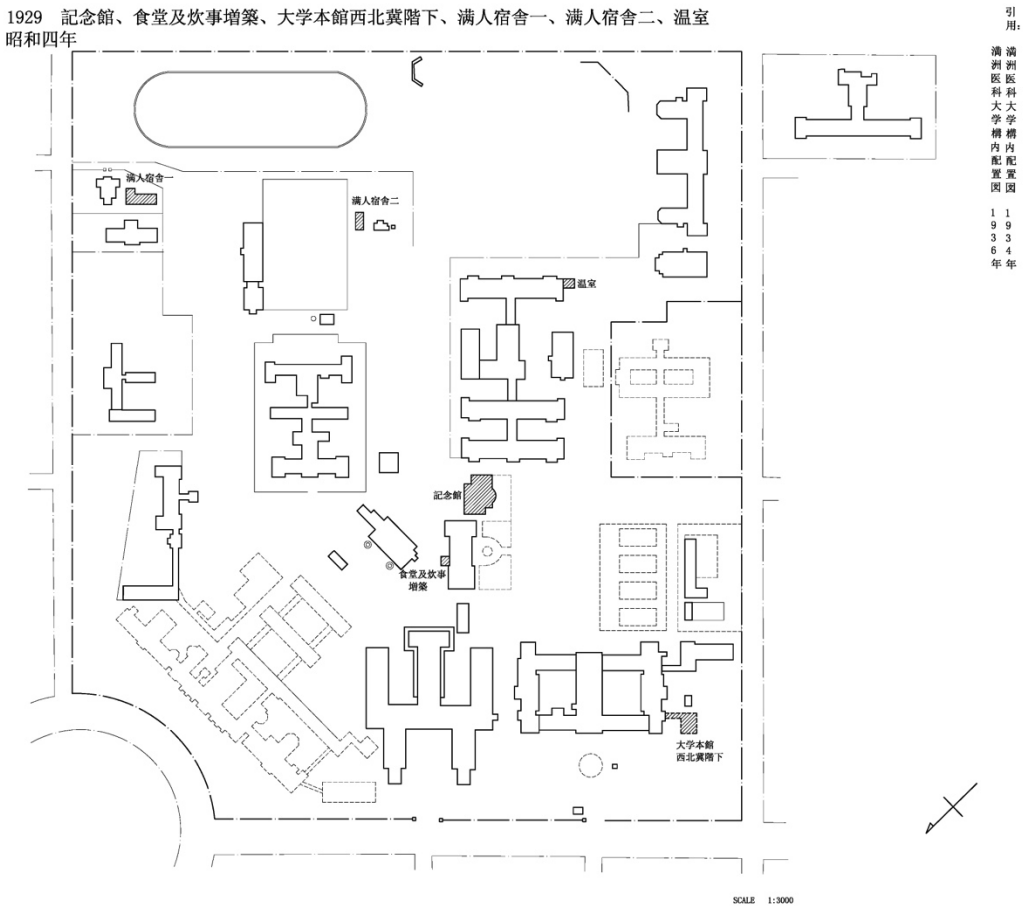
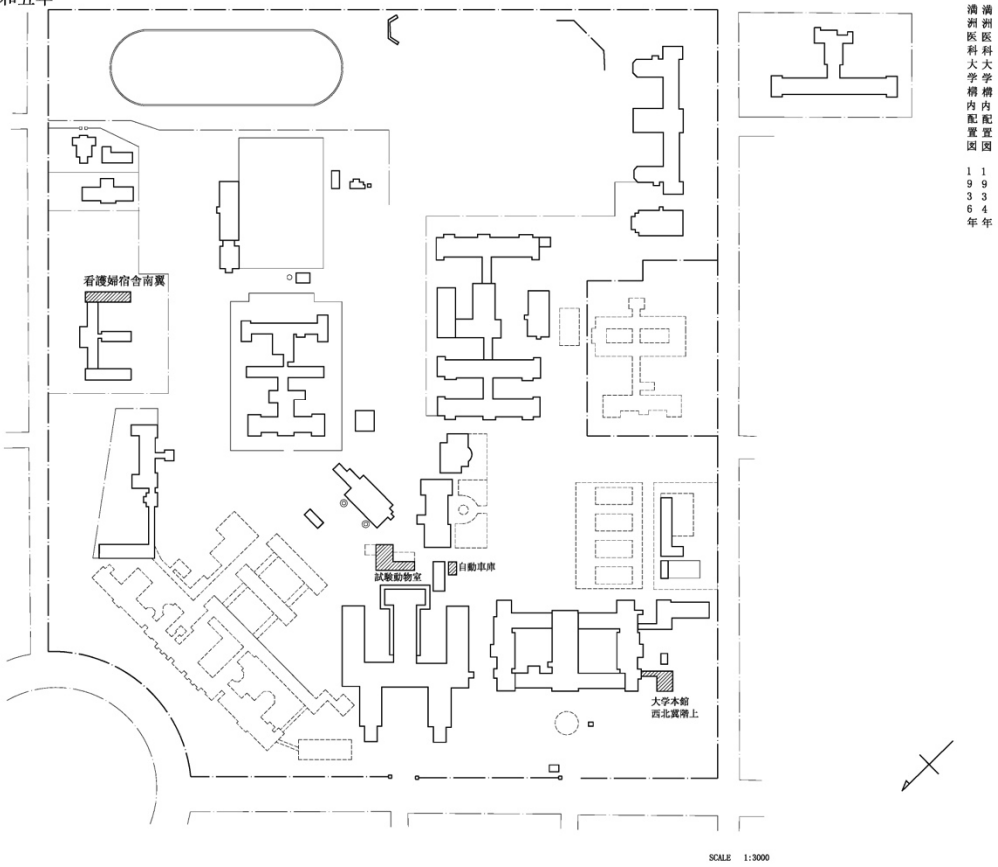


Figure 4-35-8 Transition Progress of the MMC Campus

1930　試験動物室、自動車庫、大学本館西北翼階上、看護婦宿舎南翼
昭和五年



1931　新病棟、試験家屋
昭和六年

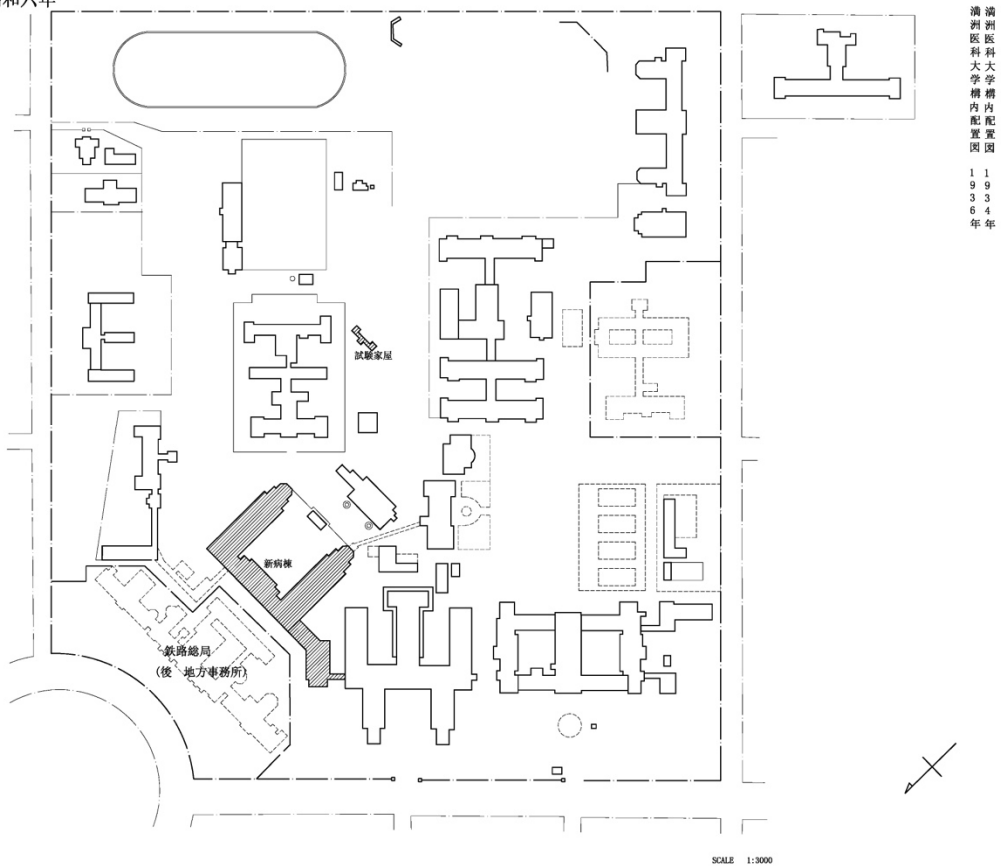
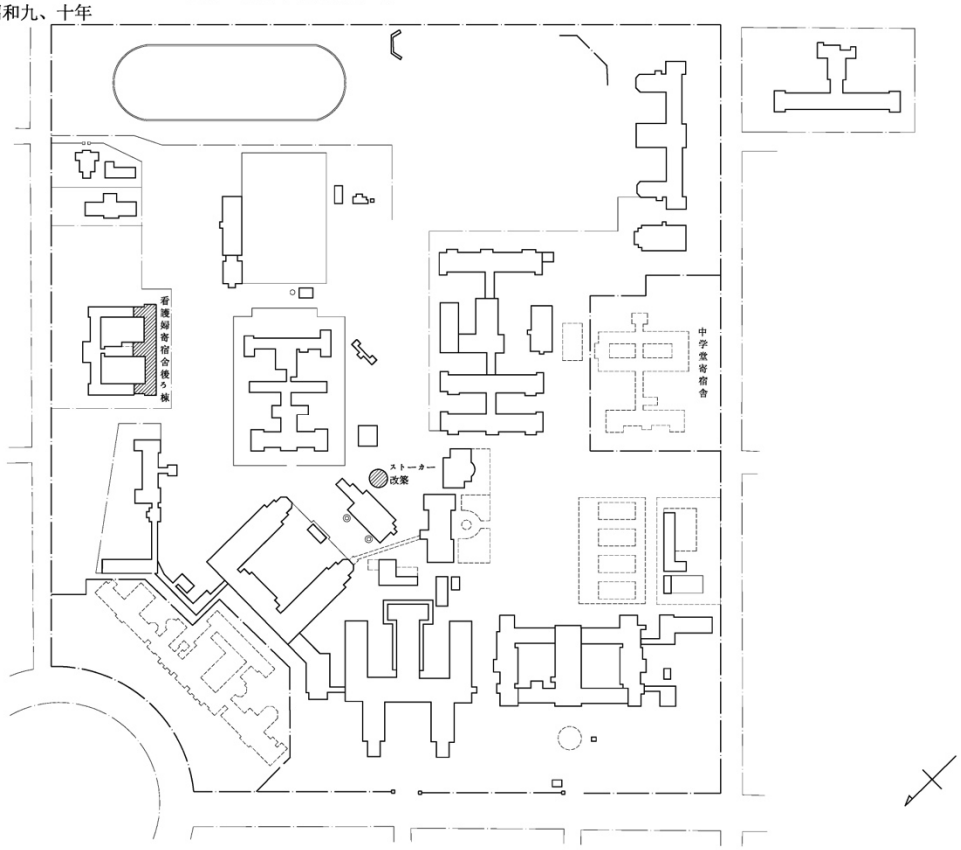


Figure 4-35-9 Transition Progress of the MMC Campus

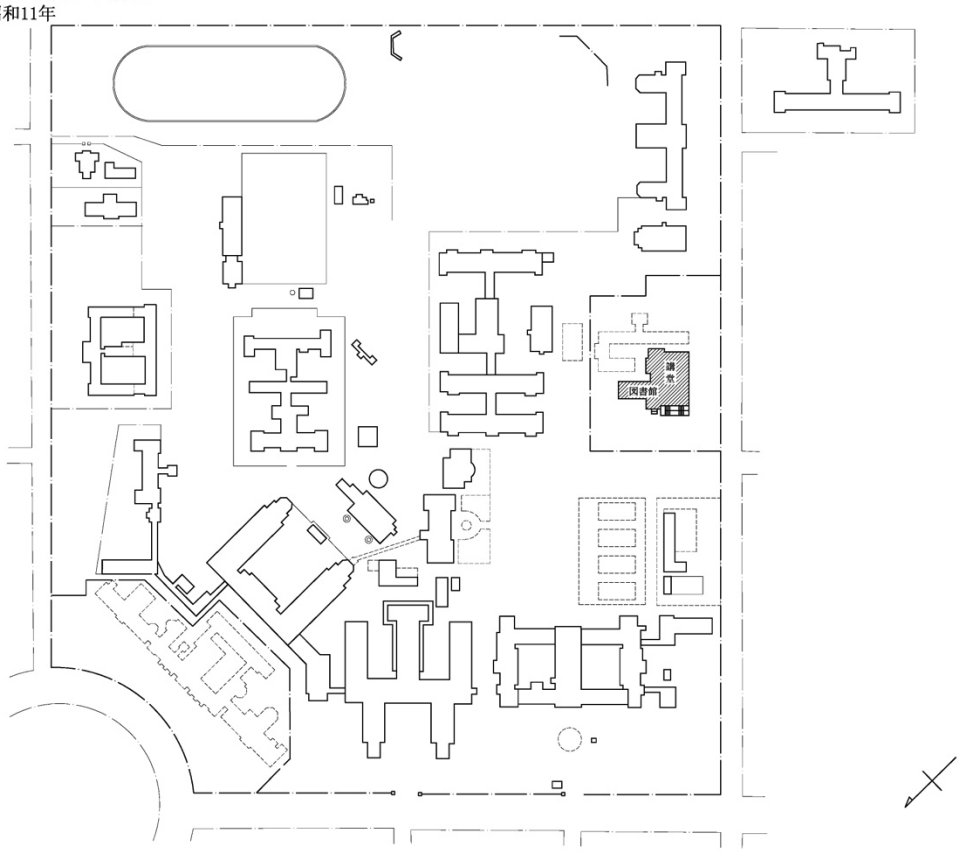
1934、1935　ストーカー改築、看護婦寄宿舎後ろ棟
昭和九、十年



引用：満洲医科大学構内配置図　1936年

SCALE　1:3000

1936　講堂、図書館
昭和11年



引用：満洲医科大学構内配置図　1936年

SCALE　1:3000

Figure 4-35-10 Transition Progress of the MMC Campus

In 1911, the South Manchuria Medical School Preparatory Dormitory (南满医学堂予科宿舍) was the first completed building of the school (Figure 4-36). It was a bungalow with an area of 1160 square meters and partly used as temporary classrooms. In addition, the old isolation room of the hospital was occupied as a temporary anatomy classroom (解剖学临时教室). Meanwhile, the classroom on the upstairs of the hospital main building (医院本館) had also been requisitioned as a student classroom for the school. In 1912, with the building area of 623.33 square meters, the original preparatory classroom (元予科教室) was completed. In the same year, the building area of about 1950 square meters, the original two-story undergraduate Dormitory (元本科寄宿舍) was also completed. Classrooms and student housing shortage situation have been partially alleviated, but the real solution to this situation was achieved until 1914 when the undergraduate classroom buildings (大学本科教室棟) was built, later it was renamed as the Main Building of College (大学本館) in 1922. The Undergraduate Classroom Building (Figure 4-37) started construction in September 1912 with two-story brick masonry structure with the Renaissance-style. The building area was 2890 square meters in the beginning, contained four large ladder classrooms, other ancillary function rooms as well as herbarium room, ready rooms, laboratories, operating rooms, a professor of room, assistant room and reception room. Completion of this building, echoed in Houten Hospital Main Building built in 1909 (Figure 4-38), had become landmarks in the city of Houten at that time.

(時當立創)舍宿寄及室教

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

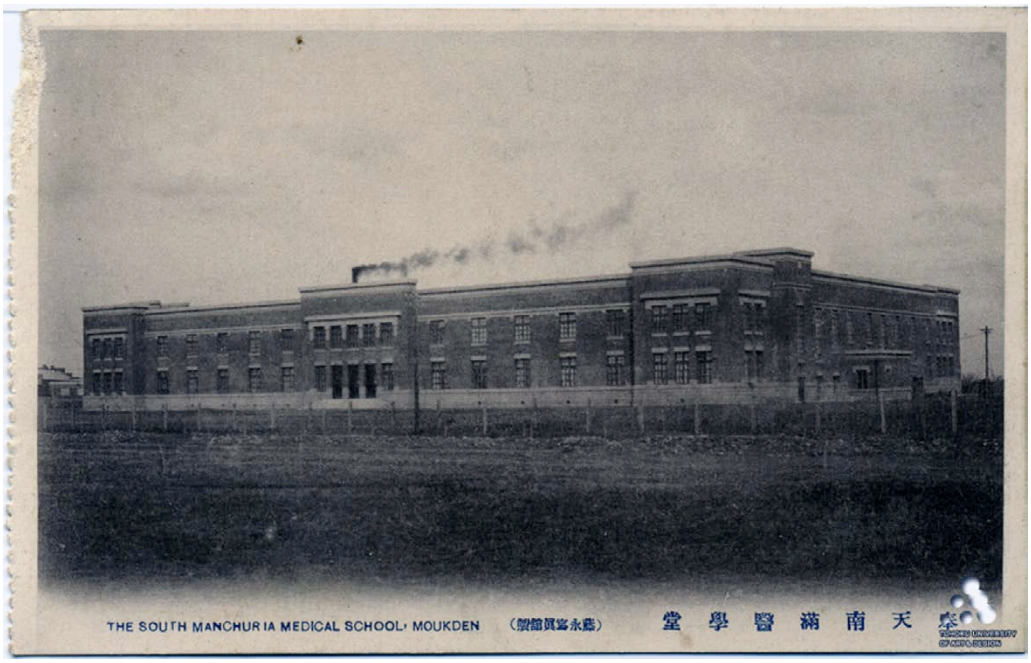


Figure 4-37 Photo of the Undergraduate Classroom Building in 1910s

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

Prior to 1914, the constructional situation of the hospital was also documented in detail. August 1909, Houten Hospital Main Building (医院本館) and another three Wards completed. In October with heating boiler room also completed, these made Houten branch (大連医院奉天分院) moved into the new buildings from the original temporary buildings. In July 1910, the hospital's cooking room, bathroom, mortuary, water room and its surrounding wooden fence and other auxiliary facilities, had been completed gradually. October 1911 the hospital completed the ice storage bin. The following year in August, the new hospital procedures are developed. Meanwhile, Houten Branch of Dalian Hospital was renamed as

the Houten Hospital (奉天医院), with Internal medicine, Surgery, Ophthalmology, Dentistry dental, Obstetrics and Gynecology departments. Based on this change, two new Wards were completed. The Incinerator for medical waste (汚物焼却爐) also completed in November of the same year. In October 1913, anther two new wards were constructed, making the basic hospital structure formed. Then, the lecture auditorium for the Surgery department (外科臨床講堂) was constructed in June 1914. Continually, the one for the Internal medicine (内科臨床講堂) was built in October in the same year. Between this period, in September, the hospital temporarily Infectious Building (仮伝染病棟) was also built completed. In addition, the central boiler room & the gas generating chamber (中央气罐室と瓦斯発生室) and other auxiliary facilities were completed in the same year. Because there were no very detailed construction drawings records about the buildings mentioned above in this period and existence of many temporary constructions, which made a hard clear distinction of them on the Master Plane. Therefore, the research illustrated them by one graphic as one period construction situation.

June 1915, the former Houten Hospital became a subsidiary hospital of the South Manchuria Medical School. From this year, the construction of schools and hospitals were unified planning together. In this year, Guard room, Enbujyo (演武場)[124] and the Carpenter room (木工室) were built. In 1916, a small incinerator for medical waste (小汚物焼却爐) and the Undergraduate Dormitory (本科寄宿舎) were completed the construction. In addition also two tennis courts were constructed of in the same year. In the next year 1917, the Kyudo-Jyo (弓道場) and the kitchen of the Undergraduate (寄宿舎炊事場) were also completed. Between 1918 and 1919, the rapid development of school construction, manifested as, Nurse dormitory (嚶鳴寮) had been Constructed the first phase; Vivarium (动物饲养所) , bone-dispose room (製骨所), big incinerator for medical waste (大汚物焼却爐) were also constructed in the same period. At the same time, hospital pharmacy (薬局), Ward No.7 used as the psychiatric Building (七病棟，精神病棟), Ward No.9 (九病棟), Ward No.10 used as the infectious building (十病棟，伝染病棟) and so on had been constructed too. Since the founding of the school to 1919 when the campus site expansion, through the analysis of the density of the school building, it can be easily and clearly be seen that the construction works on campus was under the process of rapid development steadily.

In 1920, Anatomy laboratories (解剖実習室) and No.1 Chimney boiler room (煙突 1) were constructed, while the build-out work of the first floor of Southwest wing portion of undergraduate classroom building (本科教室棟南翼階下増築) was also completed. In October, the bronze statue of Kawanishi Kenji (河西健次), the former school principal, was set up in the square in front of the undergraduate classroom building and faced the school's main entrance. In 1922, when SMMS upgraded to MMC, undergraduate classroom buildings was renamed the College Main Building (大学本館), and embarked on a retrofitting the second-floor building to a four-floor building. To the end of 1922, the retrofitting work just finished expected portion. In addition, the hospital completed the construction of old Mortuary (旧霊室), while Preparatory Classroom Building (大学予科本館) also started a

new construction work at the No.11 block of Tsukuba-Cho (筑波町) in the southernmost tip of the school site.

After 1922, the rapid construction progress of the campus was continuous. Until 1924, Preparatory Classroom Building (大学予科本館) and new Mortuary (新霊室) of the affiliated hospital were constructed. The former Undergraduate Dormitory (元本科寄宿舎) reused as the Preparatory Dormitory (予科寄宿舎), was called Keimei-Ryo (啓明寮). Meanwhile, the north wing of the Nurse Dorm (嚶鳴寮北翼), the original Psychiatric Ward of the affiliated hospital (元精神病棟) and the third and fourth floors on the left part of the College Main Building (大学本館左後三、四層増築) were also completed the retrofitting work. Only from the number of the buildings of the campus build-out work, it can be seen that this period was a very important stage for the formation of the basic structure on campus. In 1925, a new Kitchen and Cafeteria of the college (炊事と食堂) were constructed. Moreover, the build-out of the third and forth floors in the right side of the College Main Building (大学本館右後三、四層増築) were completed In the same year. Then, in the following year, the second floor build-out work of the southwest wing of the College Main Building (大学本館南翼階上増築) was also completed (Figure 4-39).

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

On October 23, 1927, the new college dormitory (大学寄宿舎), which was built on the College of New expropriation of land where at the No.6 block of the Tsukuba-Cho (筑波町六番地), was constructed and named '振衣寮'. According to campus site plans that attached on the historical documents the '満洲医科大学二十五年史' and the '満洲医科大学一覧', the Stadium (体育館) closed to the baseball field was completed in 1927[125], and as well as the new Outpatient Building (外来診療所)[126] which was located in the open space between the College Main Building (大学本館) and the College Hospital Main Building (医院本館) facing to the Kitasanjyo-Tori (北三条通), making a formation of a complete and continuous

architectural landscape the campus along the side of Fuji-Machi (富士町). What needs to focus on is that the use of a completely different method of constructing the two buildings rather than the brick structure building method for the campus, which was first time to use the reinforced concrete frame structure in campus buildings. Moreover, the stadium roof using an arched steel structure was relatively rare in that period (Figure 4-40). This is significant leap of the infrastructure work in the campus evolution progress.

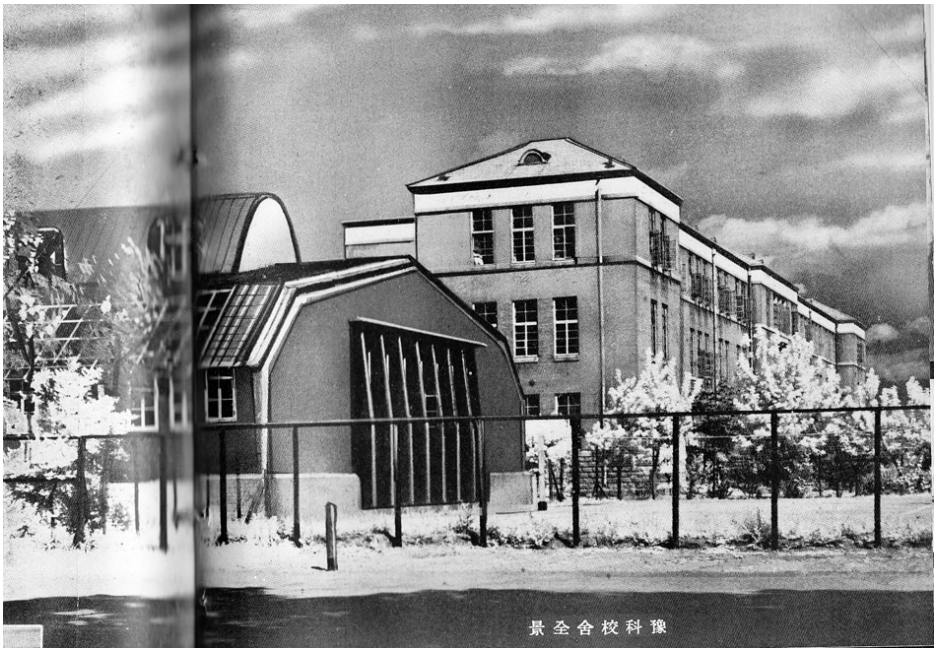


Figure 4-40 Photo of the Stadium and the Preparatory Classroom Building

To commemorate the formal abolition of SMMS, the '大学辅仁同窓会' financed the construction of Memorial Hall (記念館) in 1929, about 420 square meters, equipped with reception room, reading room, tuck shops, billiard room and other rooms and the passenger compartment for personnel held rallies and accommodation purposes, and presented to Manchuria Medical College. In 1935, three passenger compartments were built-out in this building, added its building area to 523.69 square meters. In 1929, amount of basic infrastructures were completed which are the completion of the build-out of the Cafeteria and Kitchen, two Chinese Student's Dormitories (満人寄宿舎 1&2), the Preparatory greenhouse (大学予科温室) and the first floor of the northwestern wing of the College Main Building (大学本館西北翼階下増築). Moreover, in the next year 1930, the second floor of the northwestern wing of the College Main Building (大学本館西北翼階上増築) had been completed. Also, the south wing of Nurse Dorm (嚶鳴寮南翼), the garage (自動車庫) and the Experimental Animal Room (試験動物室) were constructed in the same year.

The year of 1931 was an important year For affiliated hospitals, parts of the wards in the back of the original main building (元医院本館) was demolished. Instead it was the new ward building (新病棟) was constructed and used for the new Main building in July, while the old main building was used for other purposed by the SMR.Co. Subsequently, during this

period when the construction of the hospital continued sporadically, due to the Manchuria region issued an admitted policy on patients in infectious disease, a large number of patients influx into the hospital, leading to a shortage of beds in the original infectious buildings. And it seriously affected the health and safety of the hospital perimeter. In 1934, the school expropriated 45,829.2 square meters of new land for the construction of a new infectious disease building (朝日町新伝染病棟) (Figure 4-41) in No. 57 block of Asahi-machi (朝日町 57 号), which started construction on May 8, 1934 and completed on Oct. 10, with 2292.77 square meters building area and 148 beds. The construction of the new one greatly reduced the pressure on the original hospital. The original infectious building was renamed as '医院分病栋' soon(Figure 4-42).

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

Between 1934 and 1935, the retrofitting of the rear part of nurse dorm (嚶鳴寮後翼) was completed, which was used as the Pharmacy Department (薬学専門部) showing in the hand-painted sketch of the college (Figure 4-43). A new auditorium and library (講堂と図書館) located in former site belonging to South Manchuria High School with an area of 1817.41 square meters were constructed in 1935, which would become an important landmark at the west gate in later (Figure 4-44). So far, the construction work of the MMC campus was basically completed. Until the MMC Closed in 1945, there was no other new construction works.

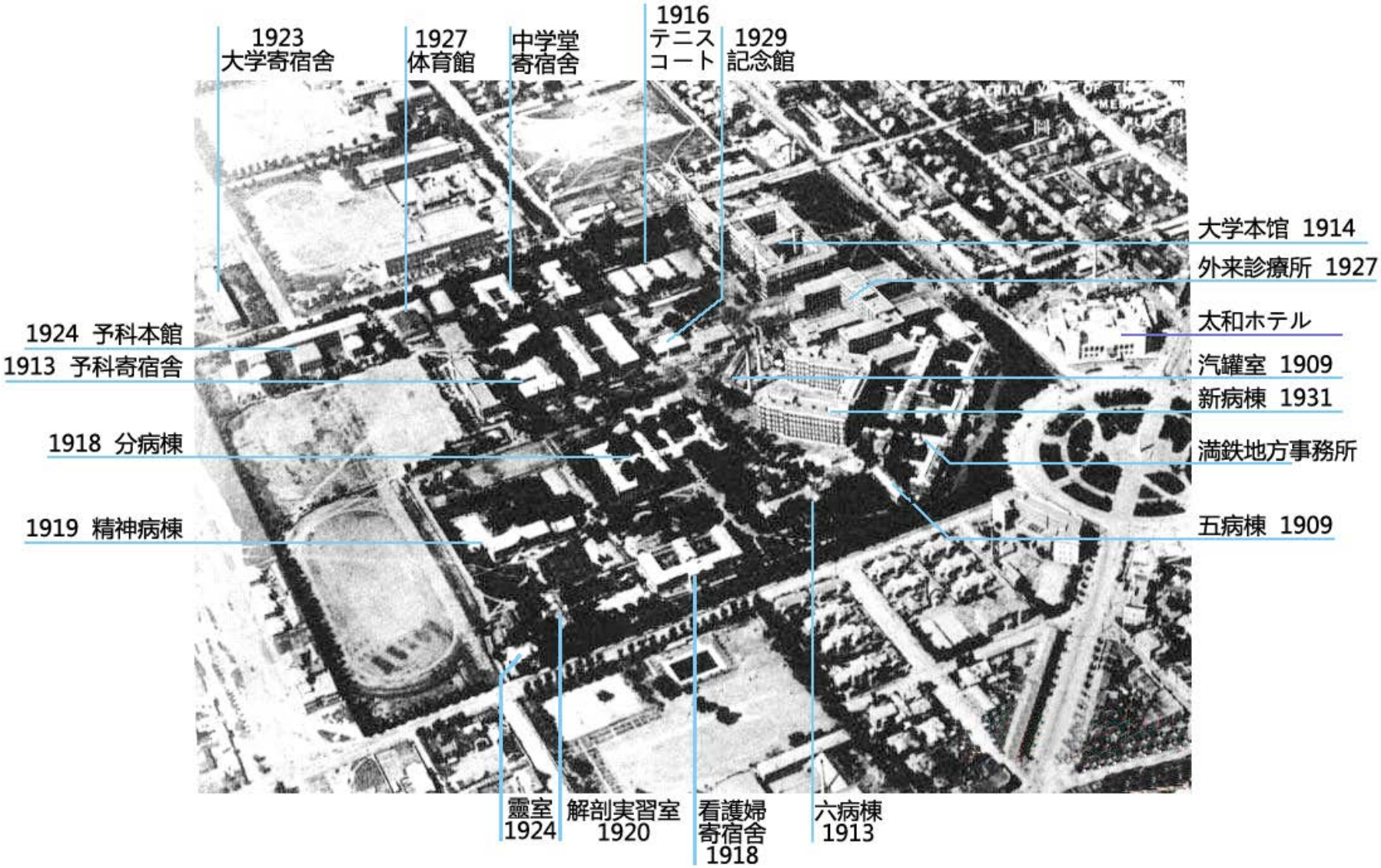


Figure 4-42 Bird View of the MMC Campus, 1931-1933

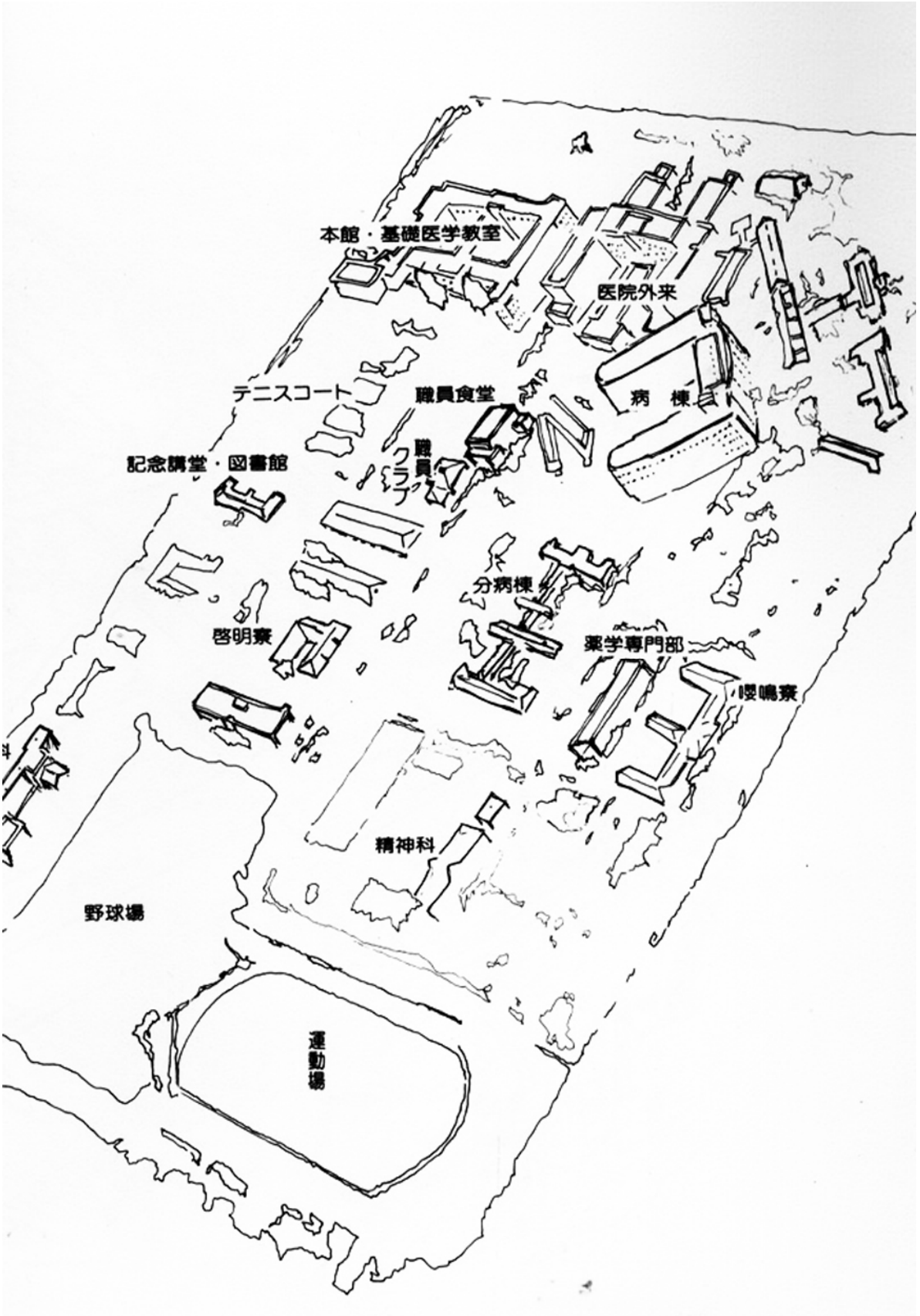
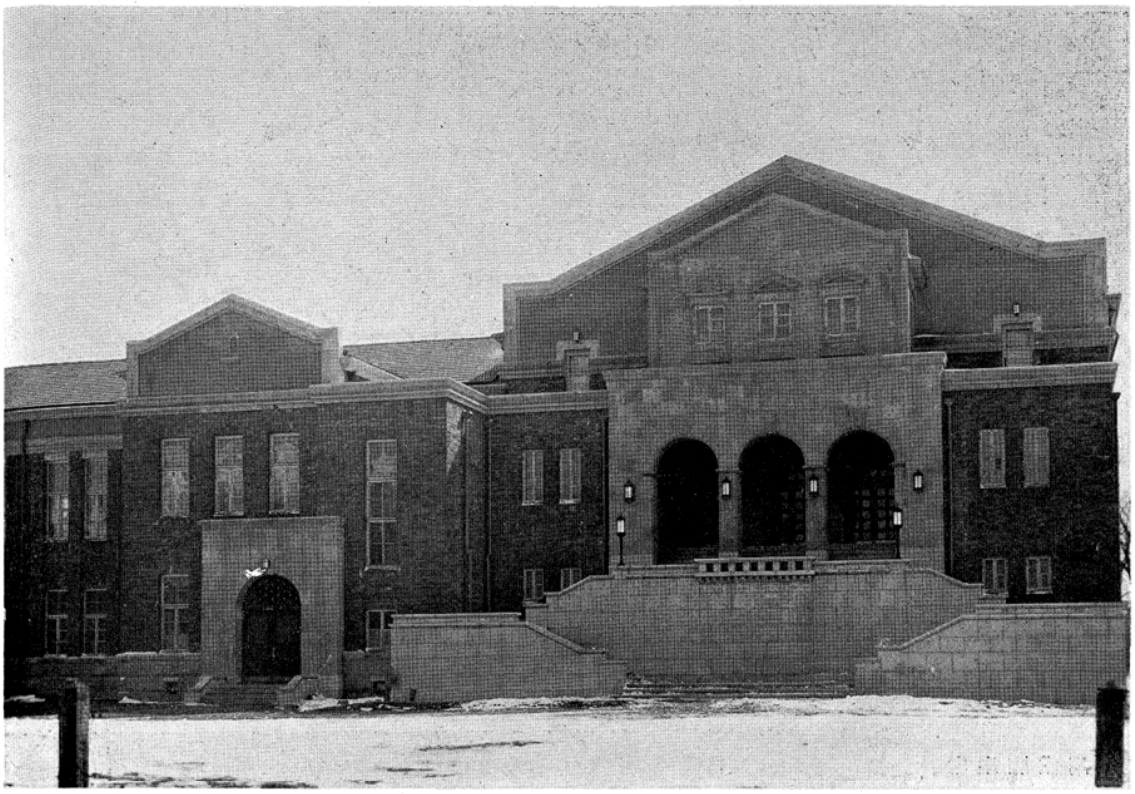
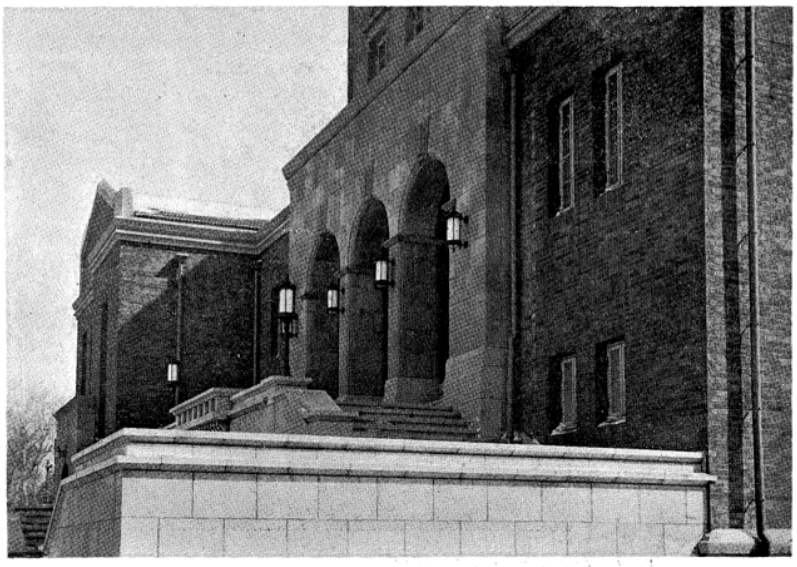


Figure 4-43 The Hand-painted Sketch of the Campus site plan



上　正　面

下　玄　關



設計者　滿鐵工事課
施工者　磯山組

奉天　滿洲醫科大學圖書館及講堂

Figure 4-44 The College Auditorium and Library

c. Analysis of the Campus Transition

The Table 4-5 showing the analyzed result of the whole transition progress of the campus before 1945.

According to historical records mentioned above, the research divides its transition progress into 3 periods, during 1907 (Campus Foundation) to 1945 (College Close).

- Period 1, Houten Hospital Age, 1907.4 – 1914.6;
- Period 2, South Manchuria Medical School Age, 1911.5 – 1928.5;
- Period 3, Manchuria Medical College Age, 1922.3 – 1945.8.

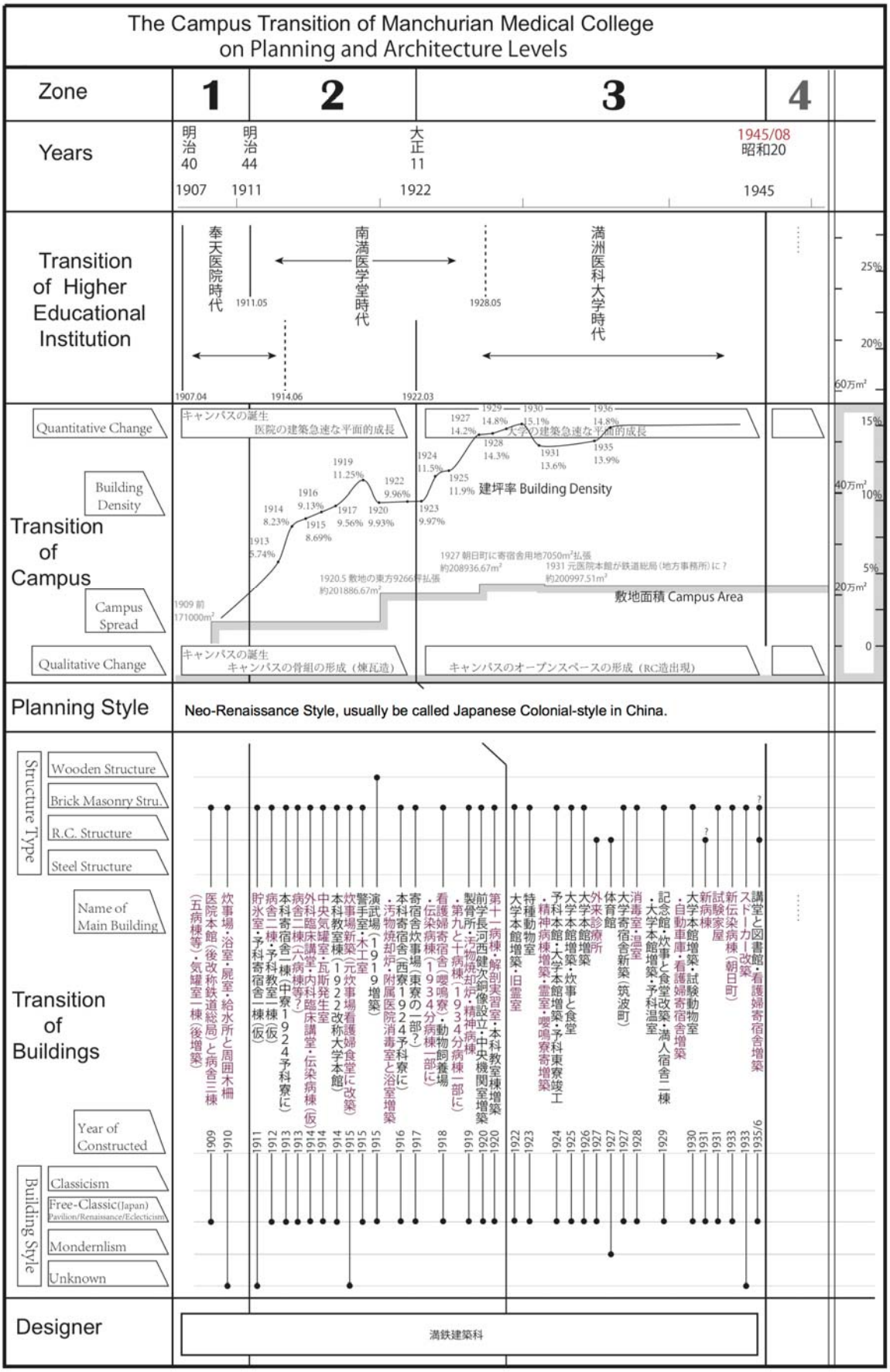
For the second period, respectively, intersect the first and third period, which causes the two intersecting periods as follows: Firstly, Intersection of period 1 and period 2, based on Houten Hospital, the South Manchurian Medical School founded institutions of higher education in May 1911, while in June 1914, the Houten Hospital changed into Affiliated Hospital without any real affiliation; Secondly, the intersection between period 2 and period 3, the students, who were enrolled by South Manchuria Medical School before the establishment of Manchuria Medical College and had not graduated until 1922, were classified in South Manchuria Medical School. After March 1922, South Manchuria Medical School stopped the enrollment and was abolished until the graduation of the last batch of students in 1928.

The campus level changes in the school are mainly reflected in the campus structure form and campus site's area. The school had several big changes when it was in 1909, 1920, 1927 and 1931. Campus site covers from 171000 square meters into the final 200,997.51 square meters. From the annual construction situation, the research calculated out the building density curve that reflecting the situation about new construction showing in the graphic. From 1909 to 1914, a rapid construction period, especially between 1913 and 1914, the growth rate reached a peak of the campus construction work, since there were a lot of important built for forming the structure of the campus structure were established in the past two years, including the school undergraduate classroom building (本科教室棟), dormitories (寄宿舎), hospital wards (病棟の一部) and other facilities. During 1920 to 1923, the school finished a few of construction work with only one larger project which was the retrofitting of the third and fourth floor of the College Main Building (大学本館三四階増築) in 1922, thus resulting in a gradual building density curve showing the smooth trend of development on campus construction. After 1923, a large number of school classrooms and dormitories and other features venues began to build pushing the school area to the peak in 1930. In 1931, with the reconstruction of the old ward and transfer of old main building, after land consolidation, a sharp decline of campus building density appeared, although the construction of the New Ward Building (新病棟) was completed. Subsequently, due to the new Infectious Building (朝日町新伝染病棟) began construction in 1933, the school construction towards a new land, which could also lead to a continuation of the slow the construction of site on campus lasting for a few years. In 1935-1936, this slow trend was broken as the new construction of the College Auditorium and Library (講堂と図書館), as well as additional construction of Nurse Dorms (嚶鳴寮). Thus, due to the school's

infrastructure facilities have been able to meet the functional requirements of the school, the subsequent constructions were almost at a standstill.

In terms of the architecture on campus, according to the historical records of the College and the SMR.Co., the designer of the campus was the MANTETSU KAISHA KENCHIKUKA (満鉄会社建築課) who designed the buildings as the Japanese Colonial Architecture Style. In this campus the Architecture style mainly shows as pavilion style of the old hospital main building and its subsidiaries ward (医院本館と附属病棟), the simplified Neo-Renaissance Style in the College Main Building (大学本館) and as well as other buildings with eclecticism. The architecture style through personal understanding and transforming by the Japanese designer became a kind of popular architectural styles in Manchuria. Amount of buildings in the campus were constructed with the Brick Masonry Structure, where the main reason possibly was the requirements for the fire resistance construction leading to the prevalence of relatively inexpensive brick structure. Because the pursuit of large space, built in 1915, a wooden structure Enbujyo (演武場) can be considered one of the exceptions. In 1927, due to the construction of architectural layers and durability requirements, reinforced concrete frame structure was introduced on campus, Affiliated Hospital Outpatient Building (外来診療所) became the first school building of reinforced concrete. Subsequently, the College Stadium also uses a steel roof based on the walls of reinforced concrete frame structures, reflecting the improved construction techniques at that period.

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



4.3.3 Analysis the Spatial and Form of Campus Based on Urban

This section provides a brief analysis and will be conducted on campus Manchuria Medical College, also aims at the planning structure and units space style on campus. As for the axis system generation, due to the closer relation to the development of city, will be arranged to analyze in the next section.

Since the foundation of the school, the Manchuria Medical College had shared the site with the Affiliated Hospital with same zoning system plan method. The difference has been divided into two levels, the first whole functional level and the second specific functional level.

The first level, according to the division of land use in hospital and in school, the campus site was divided into two parts in equal size with the extension axis line of the Kitasanjyo-Tori (北三条通). The land for the hospital A1 was the part near the Houten Great Square (奉天大広場) on the left side while the land for school A2 was close to the Kitanijyo-Tori (北二条通) on the right side. Southwest side of these two parts that near Shinano-Machi (信濃町) was used as the playground. Until 1927, this boundary was partly broken due to the construction of the Outpatient Building (外来診療所). However, except the site district was unclear land near the Fuji-Machi (富士町), the zoning boundary inner of the campus was still very clear, that the boundaries remained steadily until the college closed in 1945.

The second level was the subdivision of the first level. The hospital portion A1 can be divided into portion A1-1 for the treatment wards, A1-2 for the subsidiary function section for the hospital and A1-3 for the sports zone. In the same, the school portion A2 can be divided into A2-1 near Fuji-Machi (富士町) for college teaching function consisting of the College Main Building (大学本館) and its surroundings, A2-2 for the students living zone including dorms in the central of the campus, A2-3 for sports zone and A2-4 for college preparatory education area divided due to the completion of the preparatory main building in1924. The zoning composition of the campus site is showing as the Figure 4-45.

About architectures style and unit spaces that appeared in the form of Manchuria Medical College campus, this study also give a brief description. On campus, the College Main Building-based constructions used typical '日' Planar form. This typical planar form was also used in the original preparatory classroom buildings (元大学予科教室), Nurse Dorms (嚶鳴寮) and other buildings in the continuous construction progress of the campus. Others, such as New Preparatory Classroom Building (大学予科本館), Outpatient Building (外来診療所) and New Ward Building (新病棟) are also considered to be in the use of the deformation or simplification of this planar form. Therefore, the research suggested that the campus of MMC adopted the '日' form as the basic style, which is commonality with other Japanese-style campus. Meanwhile, it is obvious that another style called the 'Fishbone style' was also used for the arrangement of the hospital building units, this style is named as the 'SMR.Co. Hospital Pattern (満鉄病院模式)' by Nishizawa (2006). This form was used to design the initial buildings among the various hospital wards unit, in addition it has also

been used to build the school's dormitory area. Tracing the source, this shape was widely used in the plan for Tokyo Imperial University Medicine building, such as the 1903's one (Figure 4-46), and perhaps the so-called 'SMR.Co. Hospital Pattern (満鉄病院模式)' was a tribute to the shape of Japan domestically hospital style. This shape was the unique feature of Manchuria Medical College campus.

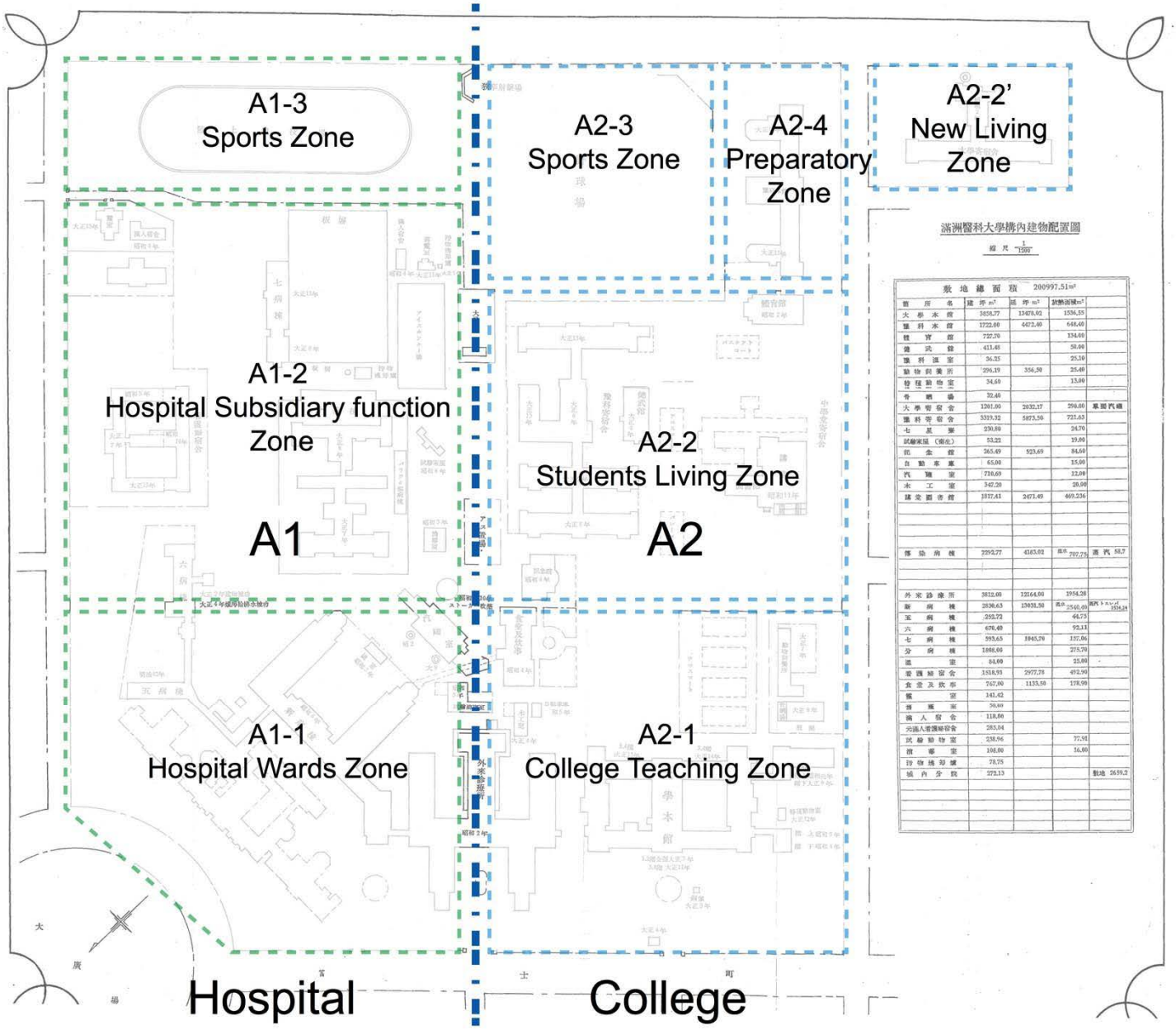


Figure 4-45 MMC Campus Partition Map

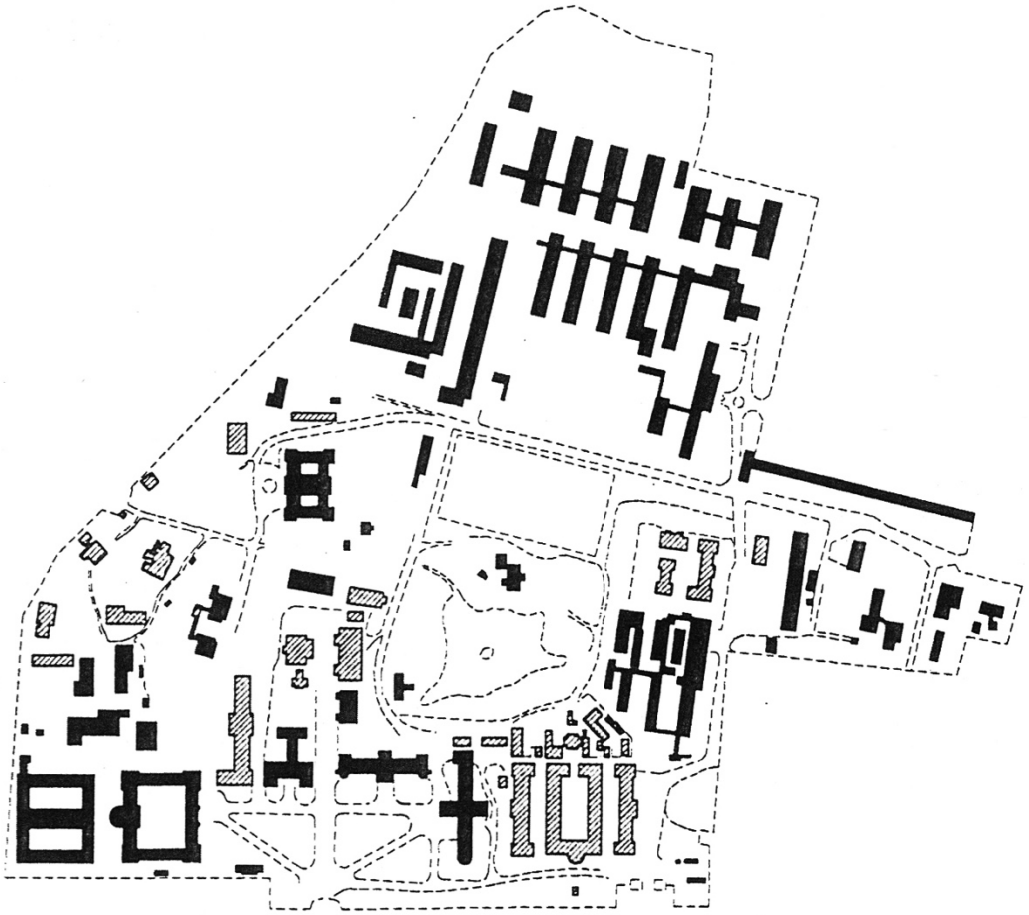


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Figure 4-46 The Campus Site Plan of The University of Tokyo in 1903

4.3.4 The Interaction Relationship with Houten (Shenyang) City

a. Campus Axis System and Urban Coordinate System

Planning and construction Manchuria Medical College campus, has a strong interaction relationship with its urban surrounding: Houten. In March 10, 1905, after the end of 'the Battle of Mukden (奉天会戦)' [127], the Japanese colonialists obtained the jurisdiction of Eastern Railway from Russians and a SMR.Co Zone named Houten New Town (奉天満鉄附属地) had been demarcated beside the Houten old town. In addition, the government named Houten Military Department (奉天軍政署) had been established too. June 1, 1906, the Consulate General of Japan (日本総领事館) with a Police station instead of original military department was set at the Xiaoxiguan area (小西関) outside of the Xiaoximen (小西門) belongs to Houten Old Town. In the same summer, with the open of the Shijianfang-Road(十间房道), a large number of houses along the barren sides were quickly established, and formed a Japanese-based residential area. By the end of 1906, about 2,216 Japanese people lived here. At this point, the construction in the South Manchuria Railway subsidiary land had not yet posed a real, only a little Japanese community existed in the corner of the new town. In this way the Xiaoxiguan area (小西関) was the main gathering place for the Japanese at that time[128].

Unlike Dalian and Ryojun in the Kwantung Leased Terrory, Houten was under the actual control in the hands of Zhang's Government (张作霖家族), only the use and executive right of the SMR.Co. Zone was vested in the Japanese colonialists. So the Japanese colonialists deliberately avoiding the construction of Houten old town, but built a new one. Although there were a lot of Japanese living in the Xiaoxiguan area (小西関) where under the jurisdiction belonging to Zhang's Government, hence and the emphasize of the construction the Houten New Town in the SRM. Co. was the important thing for the Japanese Colonist. It located in the west of the old town and the south topside of the Shijianfang-Road(十间房道), with a total area of 24.67 hectares, flat and barren undeveloped land. In 1908, for urban planning and construction started in this region, elementary school, parks, water and engineering as well as subsidiary in the west of the center began construction of a new Houten Station (奉天停車場) constructed in 1910. New Houten Station as a starting point to start laying the some radiation streets to connect the West Gate (西門) and the North Gate (北門) of the old town, setting up a chessboard small-scale road network，which the road parallel to the railway line were called '町', perpendicular to the railway lines were called '通', in order to form a convenient transport links system. The first way is called the Railway Avenue (鉄道大街), renamed as the Miyajima-Machi (宮島町) later. This rode paralleled to the Eastern Railway line, then vertically connecting the Shijianfang-Road(十间房道). The second one called the Shotoku Avenue (昭徳大街) renamed as the Naniwa-Machi (浪速町) later. It directed to the Xiaoxiguan area (小西関) of old town and have a 45 degree angle with the Railway Avenue. Subsequently, perpendicular to the Houten Station (奉天停車場), road width twenty-Kan (二十間) Shenyang Avenue (瀋陽大街) started laying, later it was

renamed as Chiyoda-Tori (千代田通). Until then, the initial formation of urban structure of Houten New Town had showed up[129].

As shown in the Figure 4-47, the town's main coordinate system is a positive cross coordinate system with the east of the Qing railway strike as the basis and Houten Station as the starting point. Containing an auxiliary coordinate system 45-degree angle to the main coordinates, this system indicates the urban development direction and connecting the old and new city. However, the very important one axis of the MMC campus had a strong correspondence with this auxiliary coordinate system.

Based on the map 'FENG-TIEN MAP' and the retraced campus site plan in 1913, the research draws the analysis diagram between them (Figure 4-48), which shows that the campus located in the south side of the Houten Great Square (奉天大広場) where was the important node of the Shotoku Avenue (昭徳大街). And the Campus was facing to square with its North corner. The main trends of the old hospital Main Building and subsidiary wards that built in period 1909-1913, were associated with the city's vice-axis (the Shotoku Avenue) the with the parallel relationship, this progressive, arranged in parallel so that forms a obvious common architectural axis that direction to t the Houten Great Square and vertical to the vice-axis of Houten New town. According to the study Nishizawa[130], this architectural layout mode in this hospital, as a typical layout, is known as the 'SMR.Co. Hospital Pattern (満鉄病院模式)'. Notably, the old hospital Main Building's layout also happens to have the same 'South-North 'relationship with the buildings in the old town, is there accounted the traditional Chinese architectural planning ideas are worthwhile some discussion. Meanwhile, there other buildings in parallel relationship with the urban main coordinate system. Through analysis of the axial relationship and the direction of surrounding urban roads, the research also reasonably specifically pointed out that its position has a significant relationship with development of the city.

In the analysis graphic of 1915 (Figure 4-49), it is obvious that due to the location of the Undergraduate Classroom Buildings (大学本科教室) located on the Fuji-Machi (富士町) Street parallel to the railway, the main axis of the building perpendicular to the avenue and overlapped in the axis of one small street where in the middle of the 'Kitanijyo-Tori (北二条通)' and the 'Kitasanjyo-Tori (北三条通)', which means the undergraduate classroom building (大学本科教室) was positioned in the campus site as a basic scenery for a street. The research regard it as the 'Vista Eye-stop Landscape (ヴィスタ・アイストップ景観)', which had been used in the planning of the No.6 Ward (六病棟) that appeared in the previous analysis of the 1913 graphic.

Along the upgrading of the school in 1922, a lot of constructions works were implement on the campus. In 1924, the Preparatory Classroom Building (大学予科本館) was constructed along the Kitanijyo-Tori (北二条通) on the southernmost tip of land on the campus. Unlike other buildings in this campus which their main axes are perpendicular to the railway line, It main axis is parallel to the railway line, and the coincidence with the Tsukuba-Cho (筑波町) Street axis (Figure 4-50). Vista Eye-stop Landscape was used again in

the position of the building on campus. Why choose the southernmost corner as the location of Preparatory Classroom Building (大学予科本館) in the school? The reasons perhaps are two aspects. Firstly, in order to continue dividing the land-use functional feature on campus under the condition that the land on the north side of the Kitanijyo-Tori (北二条通) were former classrooms and dormitories for the Preparatory student. Means, Here was used as the constructional site of the preparatory function buildings has been deemed in the beginning. Secondly, if slightly reduce the scale of background map in the analysis chart, at the other end of the Tsukuba-Machi was the largest Chiyoda Park (千代田公園) in the city at that time. the Chiyoda parkland span across the Fuji-Machi (富士町) and Shinano-Machi (信濃町) had the same span as the Manchuria Medical College site. In addition, the Tsukuba-Machi as the only one through-road connection between the two sites[131], became overlooking Manchuria Medical College visual corridor from Chiyoda Park. Therefore, the Preparatory building as the bottom view at one end of Tsukuba-machi Street, perhaps with a planning approach highlights the status of Manchuria Medical College in the city to promote the strength of Manchuria Medical College.

In this figure with the analysis of the relationship between the school and the city in 1924, another campus planning approach is also apparently displayed. It can be seen from the preparatory dorm, the original infectious diseases and psychiatric ward, the process of build-out of these building with the 'SMR.Co. Hospital Pattern (満鉄病院模式)' that used in the original Hospital Main Building (元医院本館), which arranged in parallel single building, and then connected the corridor construction groups. This is the significant characteristic of the Campus Planning.

According to the analysis graphic in 1928 (Figure 4-51), it can be found that the planning of the Outpatient Building (外来診療所) still used the 'Vista Eye-stop Landscape (ヴィスタ・アイストップ景観)'. The site of this building was located between the old hospital Main Building (元医院本館) and the College Main Building (大学本館). And semi-enclosed entrance plaza was designed along the Fuji-Machi (富士町) that opposite to the 'Kitasanjyo-Tori (北三条通)'. From the street direction's view, the building and the plaza formed a strong architectural perspective background, highlighting its majestic building momentum, which was exactly the same as the hospital's main building in Dalian. In addition, the axis of Preparatory dormitory and gymnasium also followed the urban main coordinate system, echoing the relationship with the city. As the school-use part of the site located in the back side of the Houten large Square (奉天大広場), so the city's vice-axis system did not influence these new buildings so much.

In 1931, the original Hospital Main Building was used as other purpose and the New Ward Building (新病棟) of Affiliated Hospital constructed in the removal of site of the old wards at the back side of the original Hospital Main Building. It became to another important architectural landscape of the Houten Great Square due to its 5-floors block was far greater than the old one located in front of it (Figure 4-52). The main axis of the campus once again echoing the relationship between urban sub axis system during this period.

Analyze the significant change around the square in the same period could easily understand the phenomenon that the axis was reused in the campus. Different from the situation that the original Hospital Main Building was overweening itself in previous case of the square, other magnificent buildings around the square had been basically completed in 1931, due to the South Manchuria Railway Company constantly development this region. The most significant sign was the complement of New Yamato Hotel (新ヤマトホテル), which designed by Yokoyi Kensuke (横井謙介) and his cooperators, opposite with the original Hospital Main Building at the other side of Fuji-Machi (富士町) (Figure 4-54). As the most prominent sign of SMR. Co. to show its financial resources, New Yamato Hotel transferred from the Houten Station (奉天停車場) to here, which showing the importance of the Square in this city. In addition, the surrounding area was arranged sequentially around by the '横滨正金銀行', '奉天警察署', '三井ビル', '朝鲜銀行', '東洋拓殖会社ビル', such a series of important city buildings, perhaps making the college has to consider reusing of this major land resources in its urban surrounding.

The Figure 4-53 showing the relationship between the axis of the New College auditorium & library and its urban surrounding.

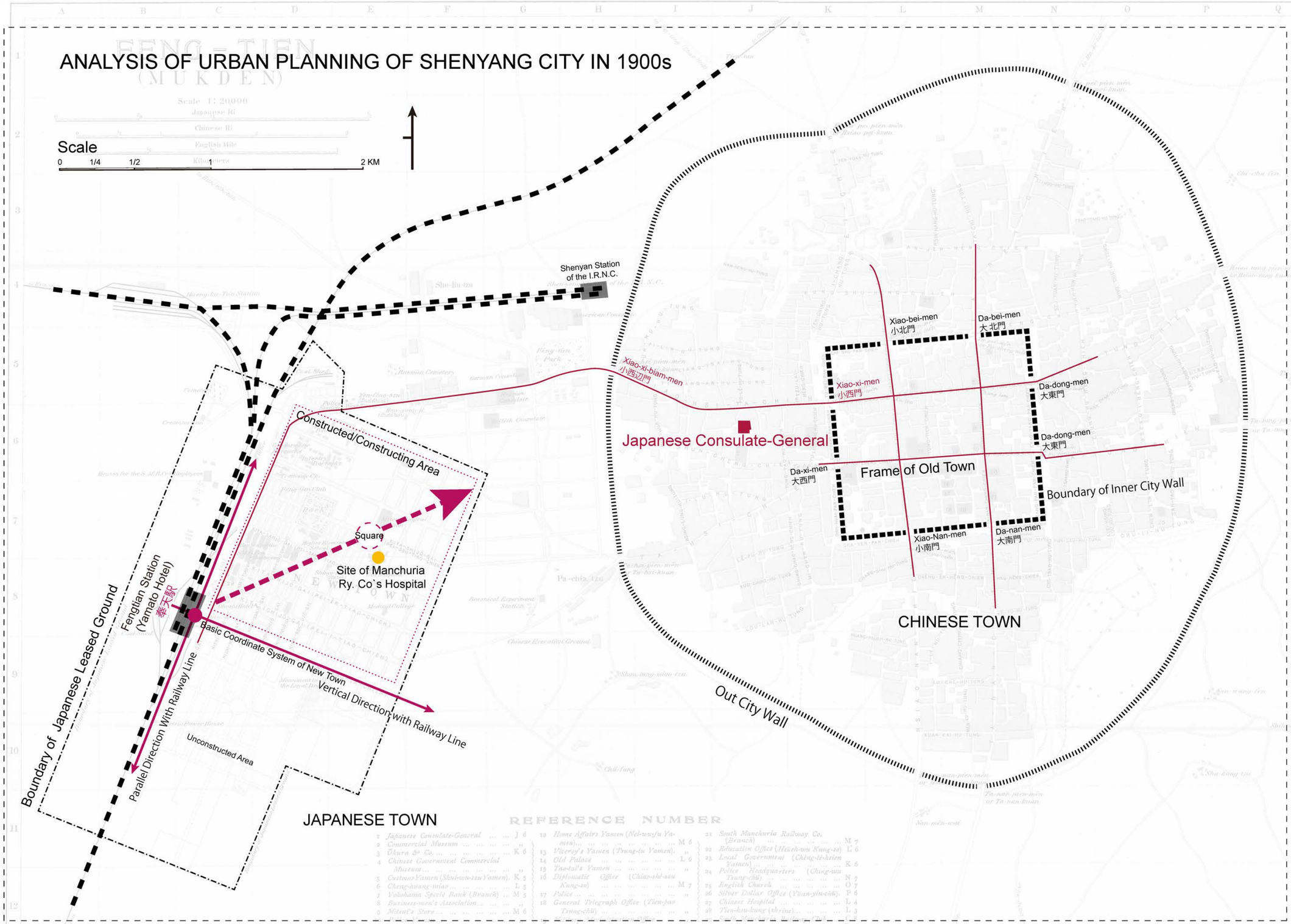


Figure 4-47 Analysis of Urban Planning of ShengYang City in 1900s

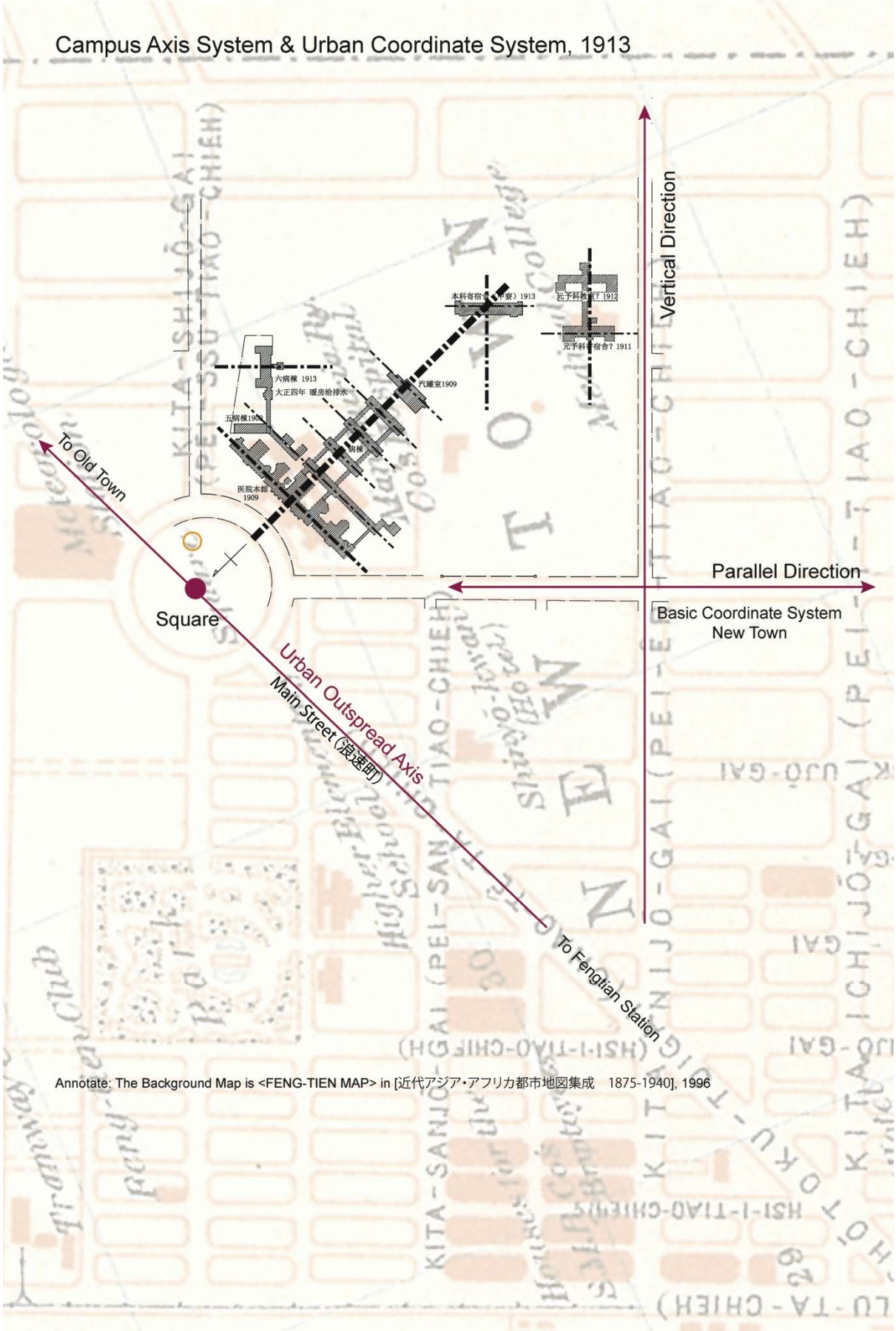


Figure 4-48 Campus Axis System & Urban Coordinate System, 1913

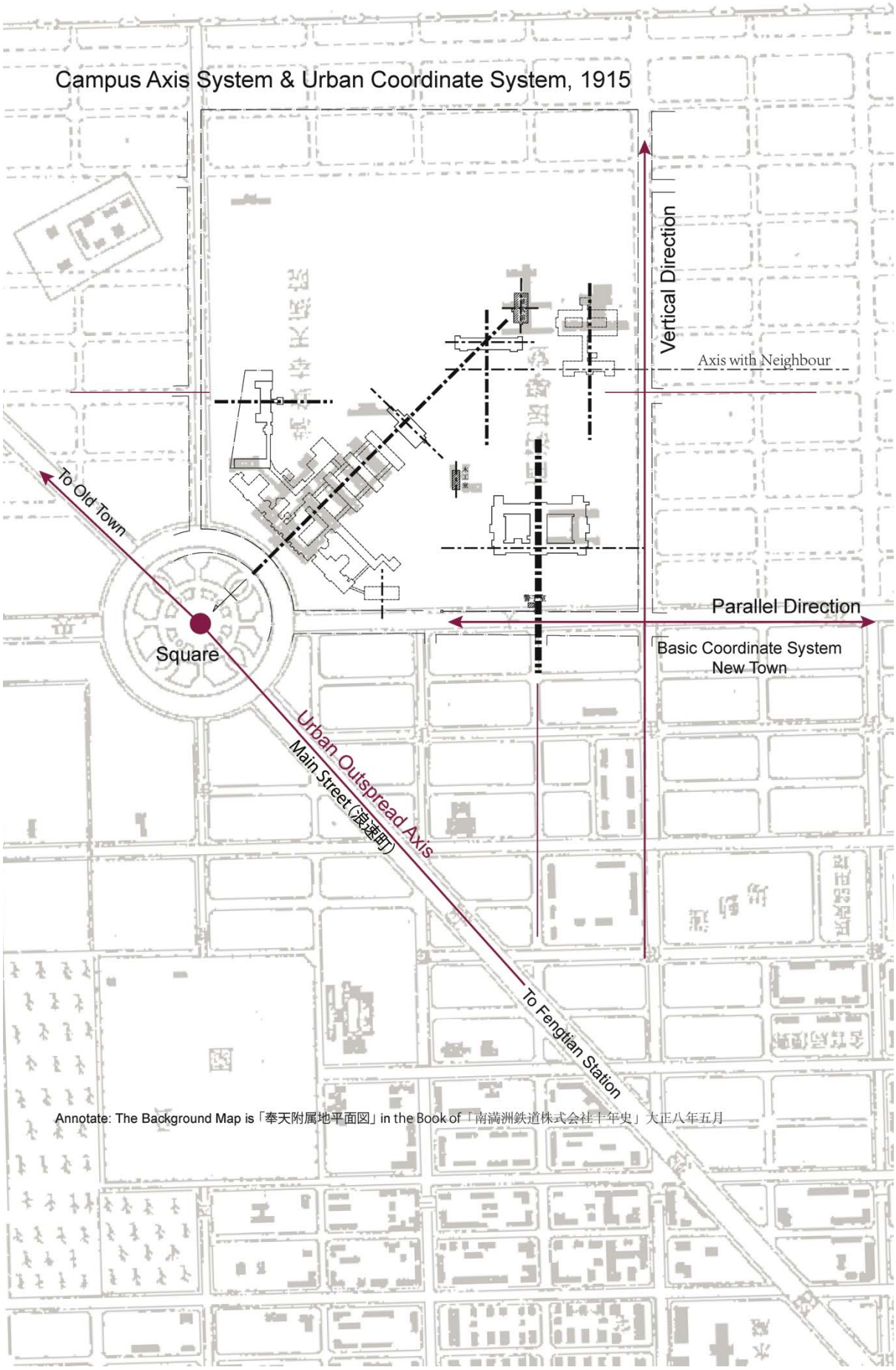


Figure 4-49 Campus Axis System & Urban Coordinate System, 1915

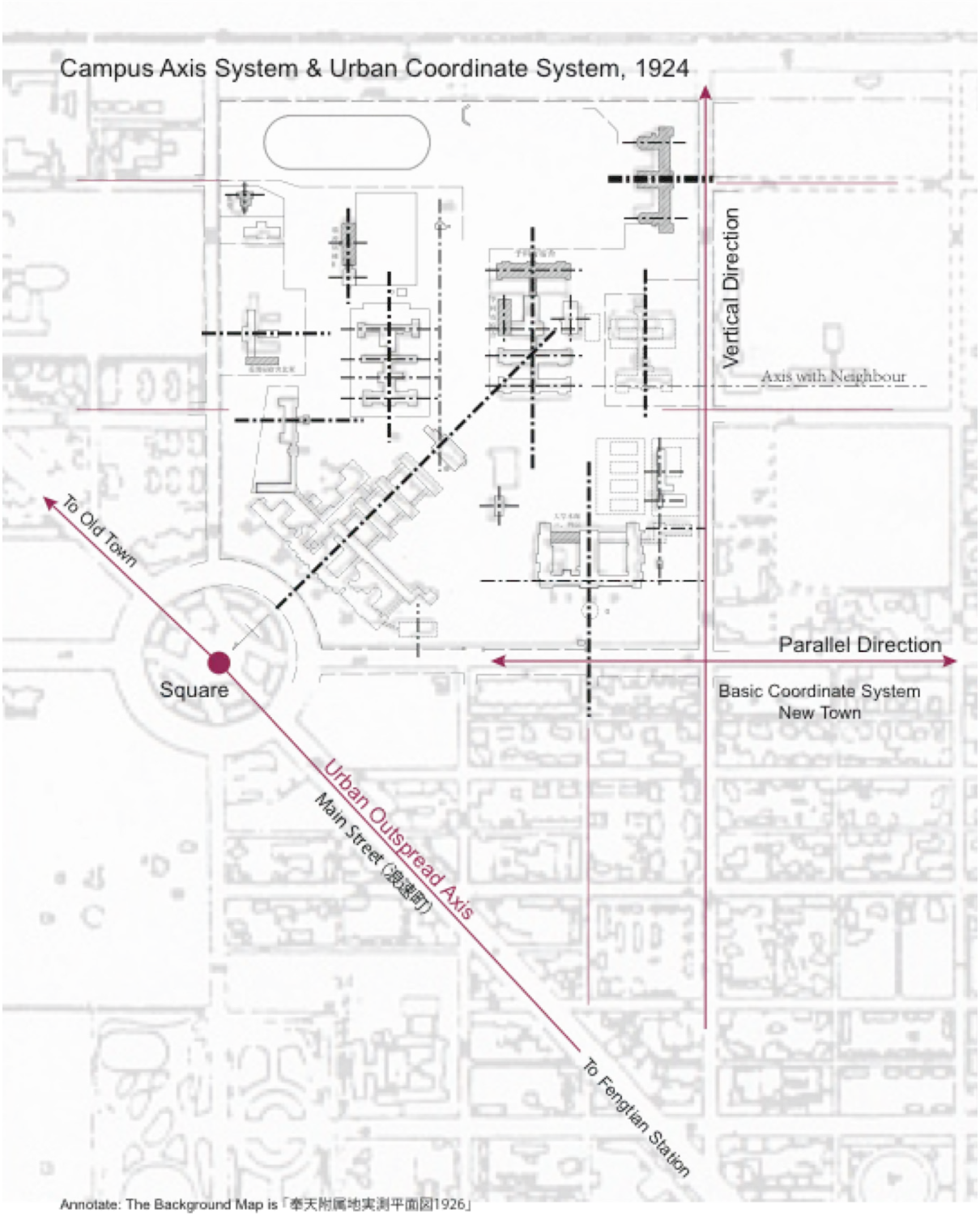


Figure 4-50 Campus Axis System & Urban Coordinate System, 1924

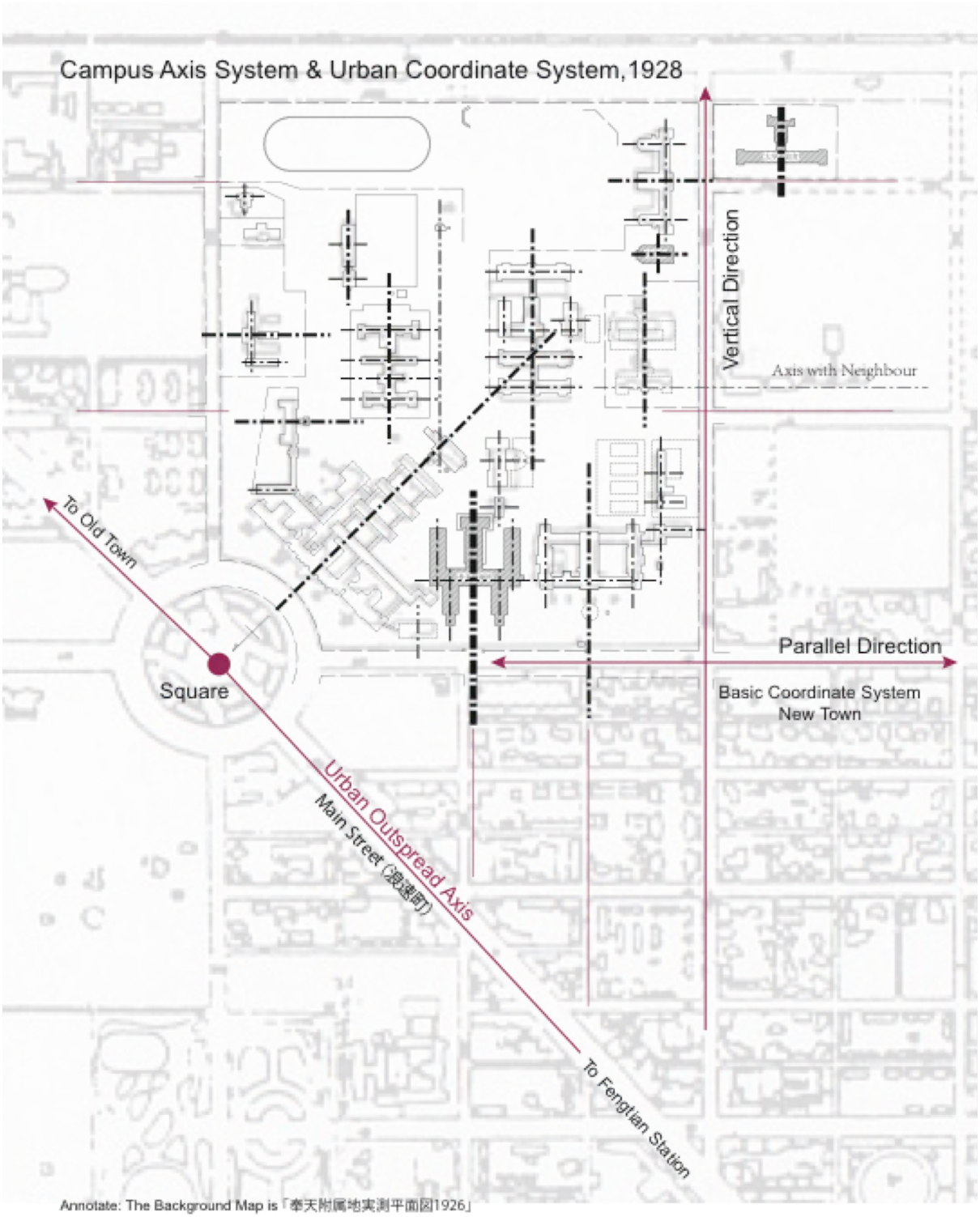
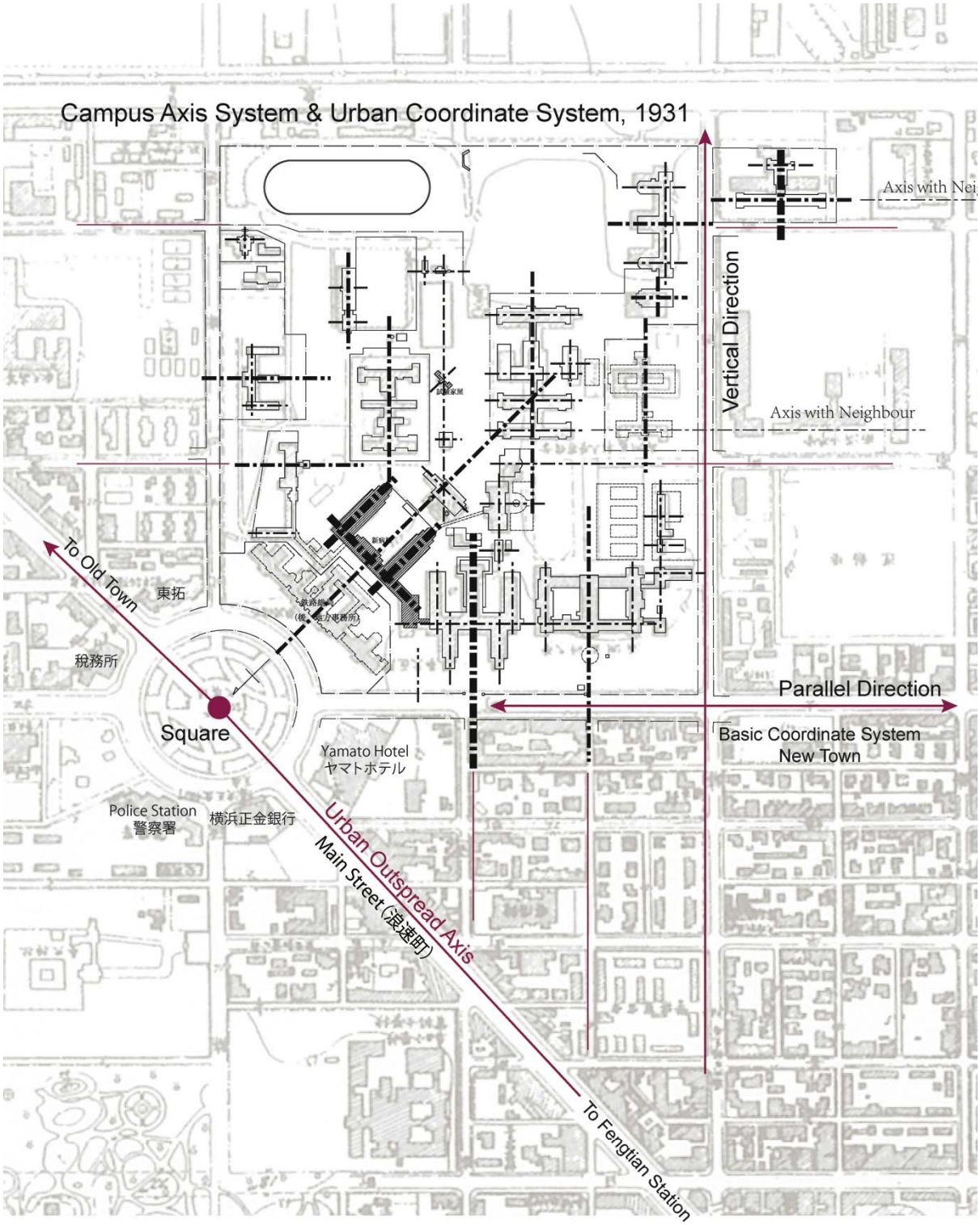


Figure 4-51 Campus Axis System & Urban Coordinate System, 1928



Annotate: The Background Map is「奉天附属地平面図1932」in the Book of [満鉄附属地経営沿革史] 1977

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

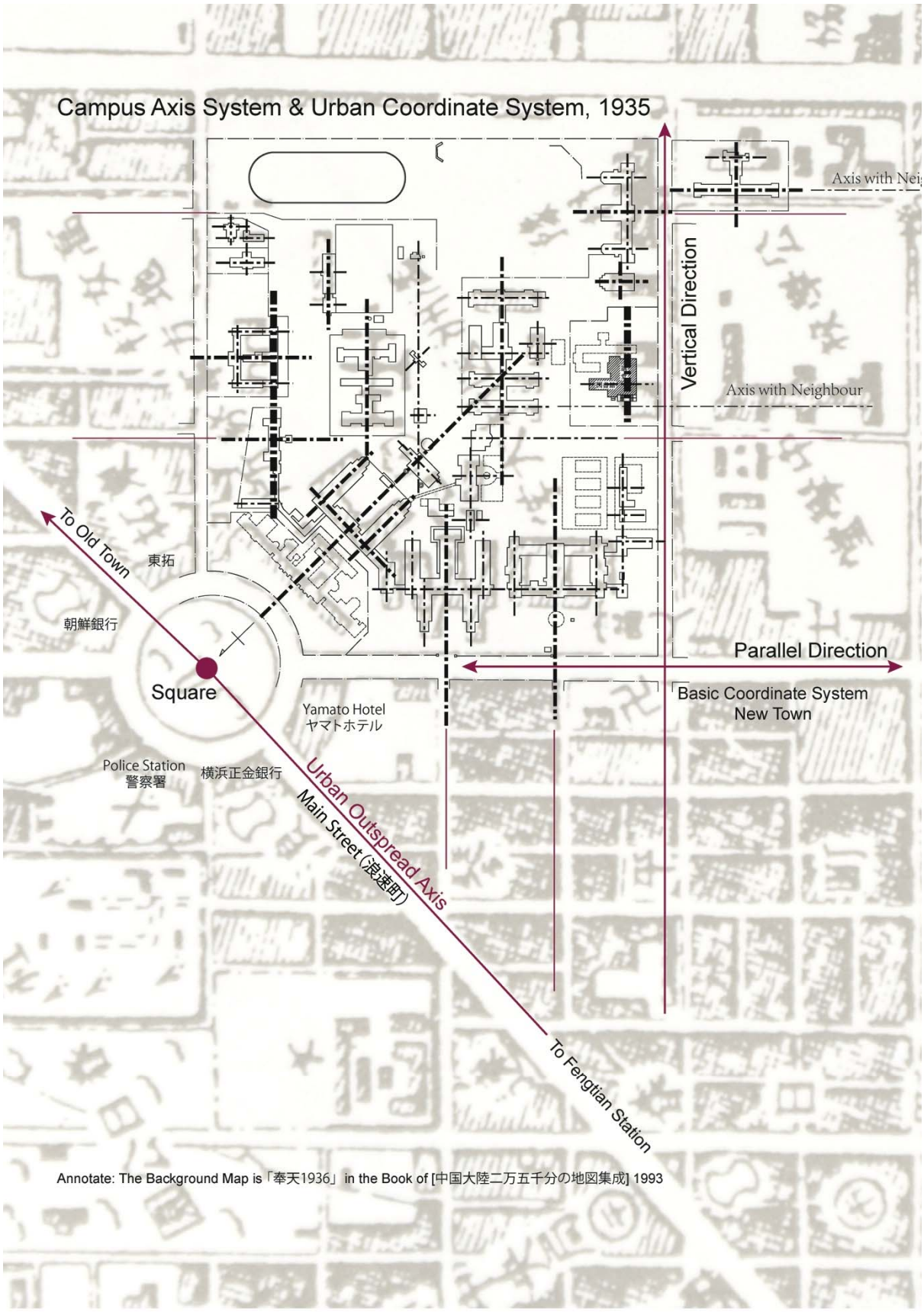


Figure 4-53 Campus Axis System & Urban Coordinate System, 1935

Figure 4-54 New Houten Yamato Hotel

b. Analysis the interaction relationship between Campus Planning and Urban development

The last part pays attention to the effects on the campus construction from city's overall planning, while this part will focus on the influence of the school building to the urban development in Houten New Town, which study was based on the urban map in 1908, 1915, 1926 and 1932. The results are shown as the Figure 4-55.

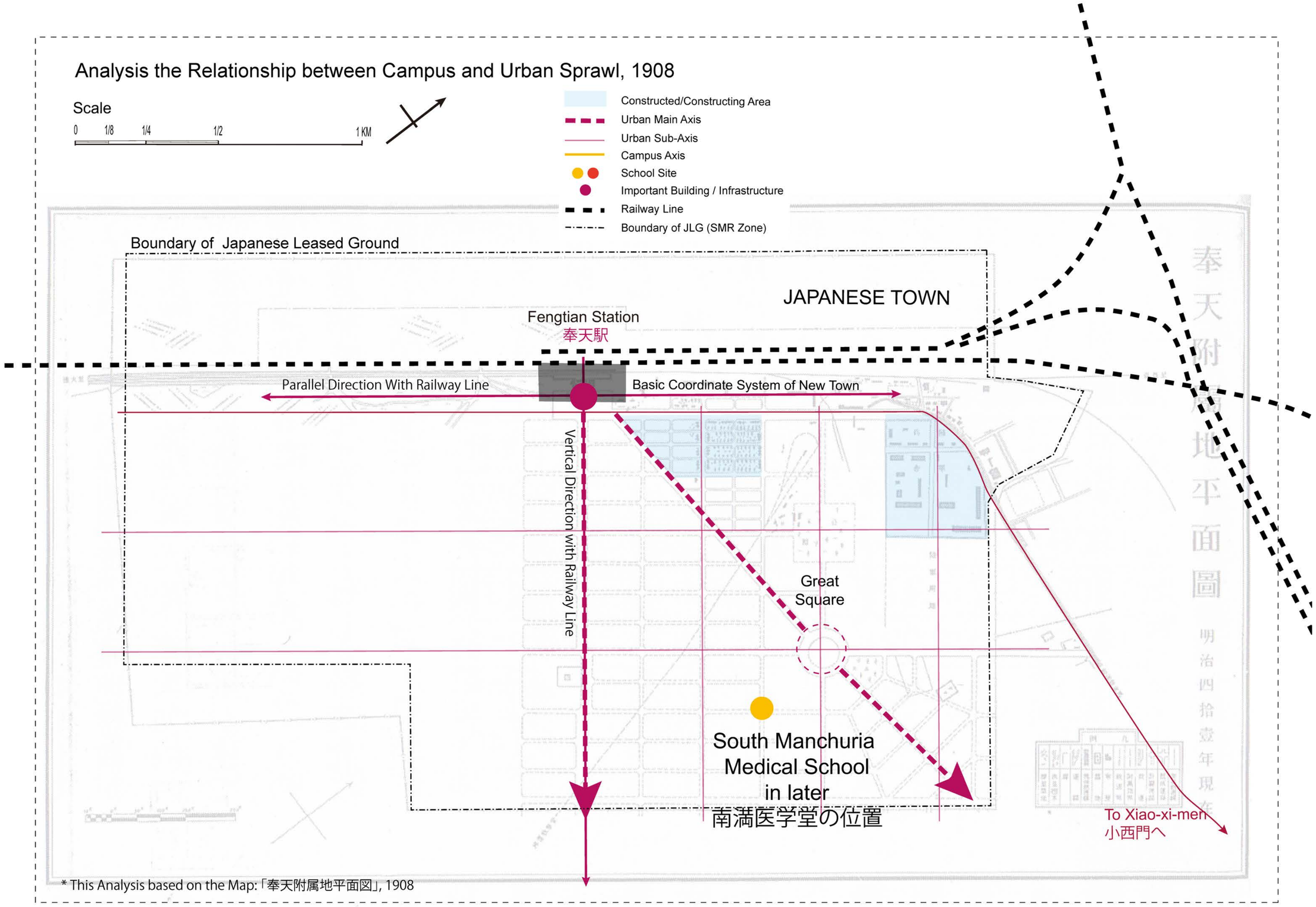


Figure 4-55-1 Analysis the relationship between Campus Planning and Urban Sprawl

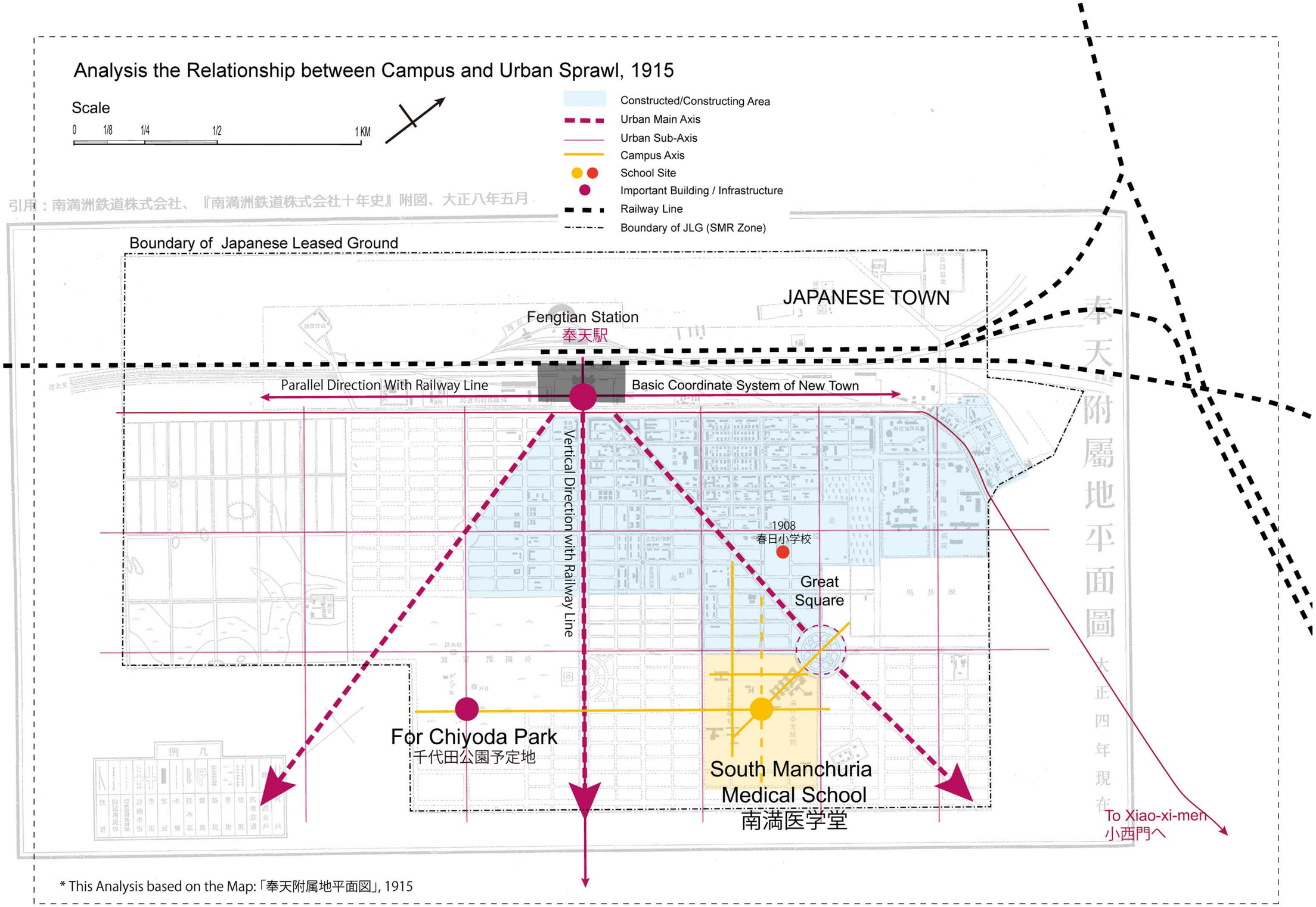


Figure 4-55-2 Analysis the relationship between Campus Planning and Urban Sprawl

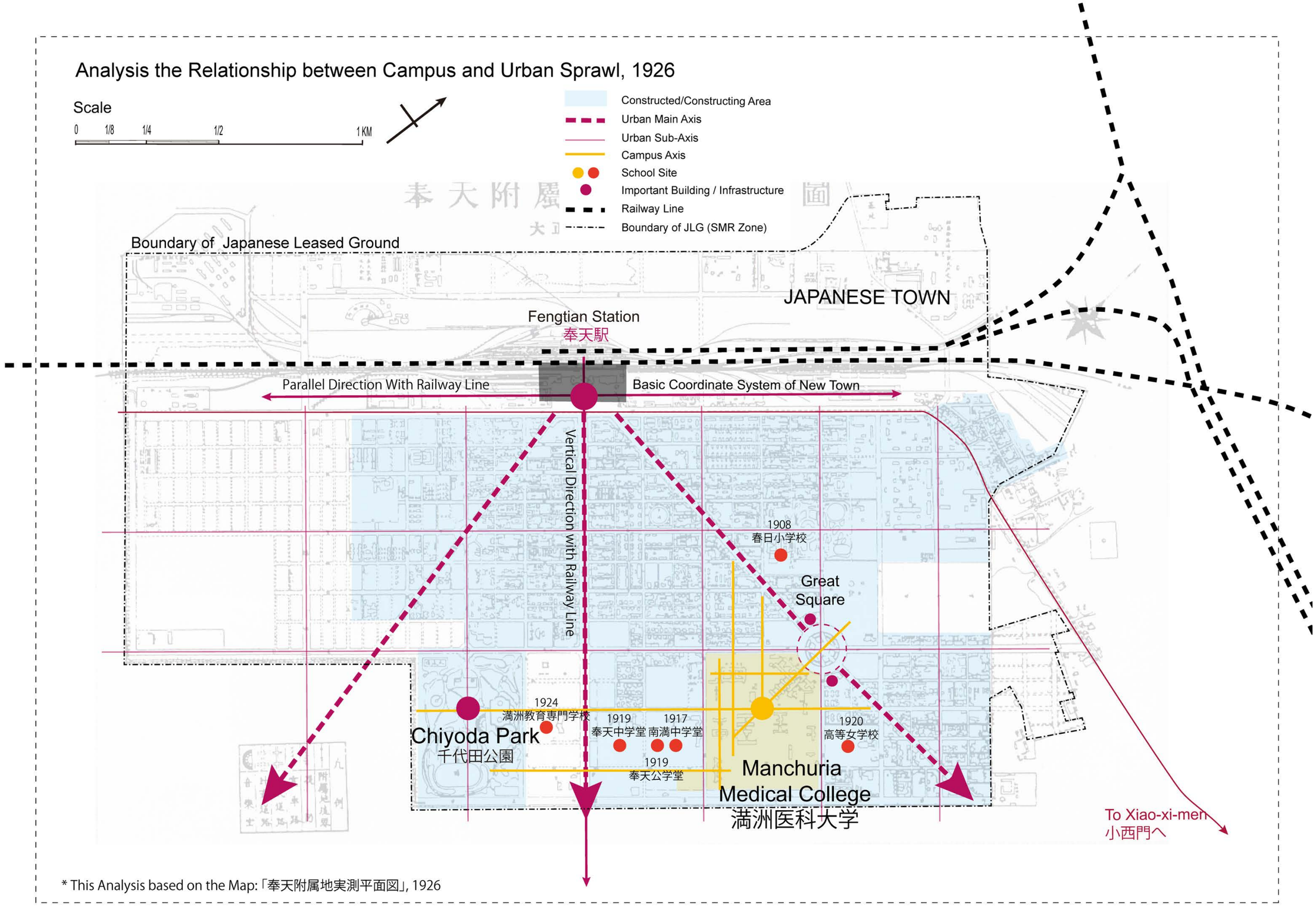


Figure 4-55-3 Analysis the relationship between Campus Planning and Urban Sprawl

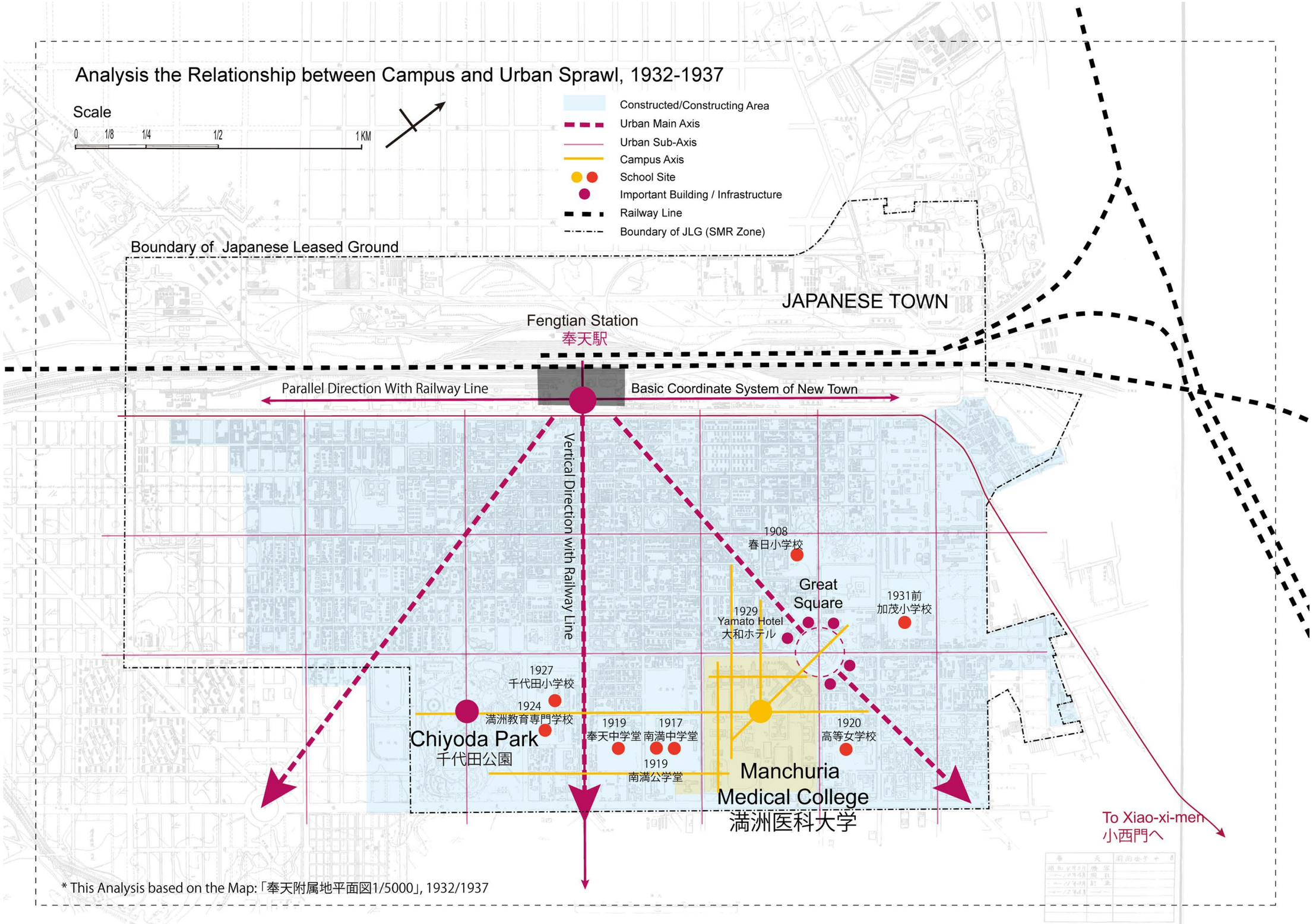


Figure 4-55-4 Analysis the relationship between Campus Planning and Urban Sprawl

As mentioned above, in 1908, the Japanese colonists mainly accumulated in the old city outside the Xiaoxiguan area (小西関), construction has just begun in the Houten SMR.Co. Zone (奉天満鉄附属地) which was the affiliated land belong to the South Manchuria Railway. New Houten station was under construction, opened to public unitl 1910. At this time, the permanent buildings within the area, only existing Army disease agency (陸軍病舎) near the town as well as the Staff's residentials of the SMR. Co. that located in opposite to the station. Only a part of the Shotoku Avenue (昭徳大街) was built to connect the new station and the square. In the following year, 1909, the buildings of the Houten Branch of the SMR. Co. Dalian Hospital (Figure 4-56), on the south side of the Square, had been started its construction work intensively. Therefore, this study suggests that, the siting and construction of Houten branch is an important reason for the development of Houten City regarding the Square as a pulling direction, although there is no records mentioned that explicitly in the historical documents of the Houten New Town Planning.

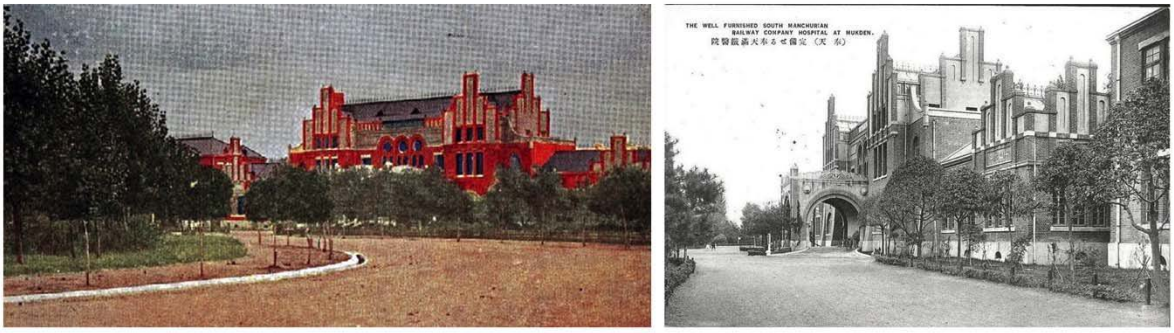


Figure 4-56 Photo of the Hospital Main Building

After 1911, the South Manchuria Medical School was established and constructed together with Houten hospital. On the map in 1915, on the both sides of the road from Houten Station to campus located Square area, lots of buildings were built. The Shotoku Avenue (昭徳大街) had become the most prosperous road in new town area, was called the Ginza in Houten (Figure 4-57). Meanwhile, built in 1908, the Kasuga Elementary School (春日小学校) became the first educational facility in this area, which is about a kilometer away from the South Manchuria Medical School campus. On the 1915 map, the land on the left side of the Shinyo Avenur (瀋陽大街) and near the Houten Station had already started construction. At the far end of the Avenur, the larger area land was planed for the Park land-use already. This planning made the park together with the SMMS Campus become two large infrastructures on both side of the Shinyo Avenur (瀋陽大街). By analyzing the current year, this study suggests that the SMMS campus played a role in encouraging and leading the direction of urban development.

Figure 4-57 Shotoku Avenue

In the analysis graphic of 1926, the most obvious change is almost the SMR.Co. Zone areas had been completed the urbanization work as a result of ten-year construction. The Chiyoda parks (千代田公園) was built but the scale significantly being reduced compared to the original Plan. Whereas its scale was the same as the scale of MMC campus, where the two showed a clearly counterpoint relations in the city as well as its internal critical facilities. During this period, MMC campus surrounding infrastructure had been completed, leaving only the basic important architectural reserved land around the square being waiting for constructing. In addition to its role in guiding and promoting urban development, another effect was also beginning to show, which was attracting other schools surrounding the campus. Between 1917-1924, with established of '南満中学堂', '奉天中学堂', '奉天公学堂', '奉天高等女学校', '満洲教育専門学校' and so on, the axis of linked the campus and the park was filling-in the education institutions. Therefore, a new educational zone had begun to take its shape on the east side of New Town boundary.

In 1932-1937, this school-gathered trend continues, the Chiyoda Elementary School (千代田小学校) completed in 1927 and the Kamo Primary School (加茂小学校) completed in 1931, had been located on the edge of the area successively. A clear educational land-zone belt was clearly expressed in the graphic shown as the Figure 4-58. Appeared in Dalian Fushimi-dai (伏見台), the schools' accumulation phenomenon also can be found in the city of Houten New Town, which confirms the conjecture and speculation of Fushimi-dai in Dalian in some extent. On this analysis diagram, another worthy of attention is that, as of 1932, the square surrounding important buildings had almost fully constructed and been put into use, making the square area with the original sense of urban planning important node be turning into reality.

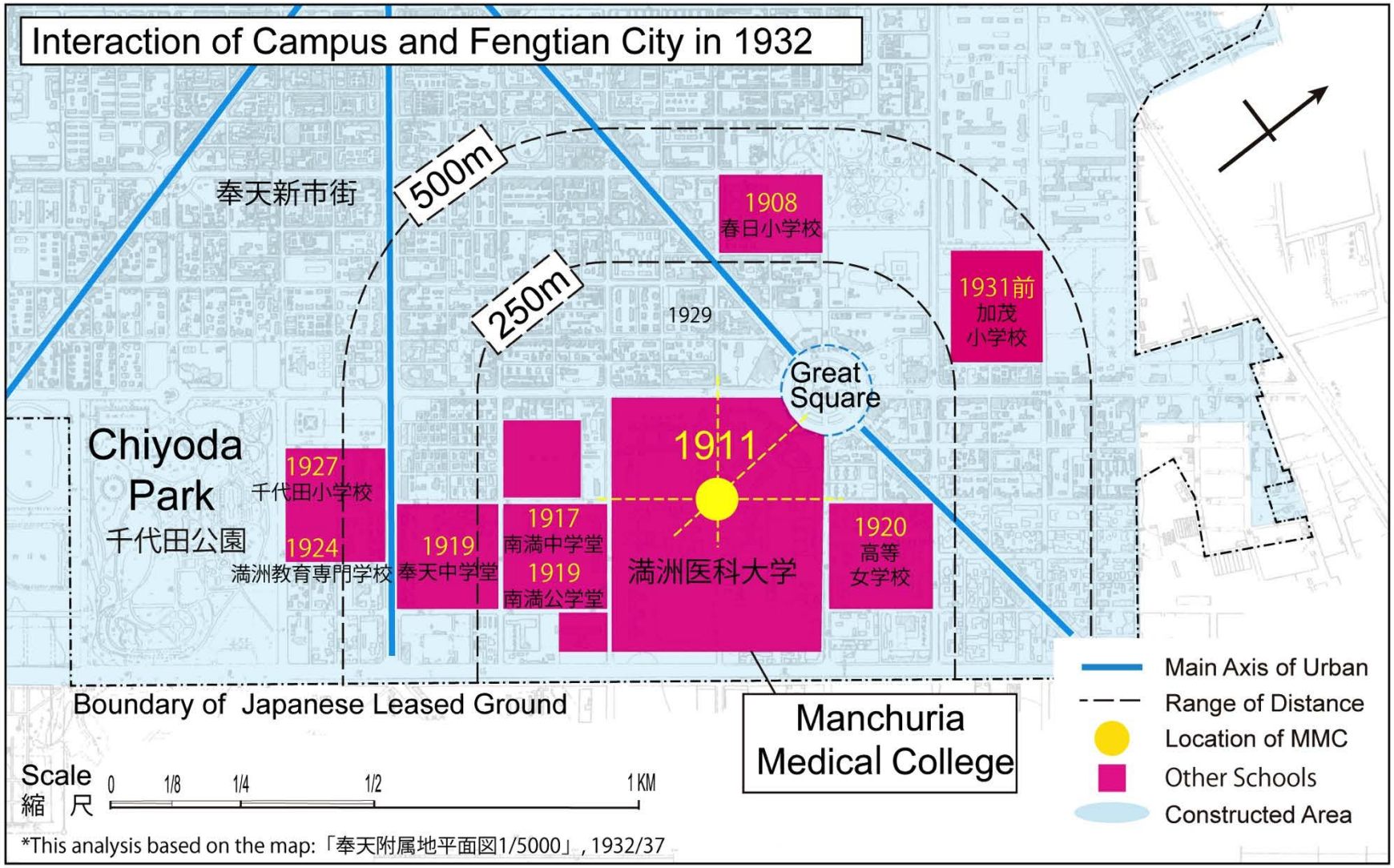


Figure 4-58 Interaction of Campus and Houten City in 1932

4.3.5 Summary

Through the above analysis, it can be found that the campus planning and construction of Manchuria Medical College, on the one hand following guidance of urban planning, planning axis are almost superposition with urban developing direction; on the other hand, it can be found that campus planning play an important guiding role in urban development. Of course, there is a reason in behind on the generation of this interactive influence, that it is the same designer that constructs the campus planning and the Houten New Town. As a planning and design institute belonging to the TIHOUBU (地方部) of SMR. Co., MANTETSU KANTIKUKA (満鉄建築課) played a significant role in generation of collaborative buildings with urban planning.

4.4 Comparative Analysis

4.4.1 Campus Designer and Campus Planning Tactics

It has been mentioned before about the design organization of South Manchuria Industrial School, Ryojun Engineering School and Manchuria Medical College. Among them, private South Manchuria Industrial School and Manchuria Medical College were designed by architecture design organization of SMR. Co, but government Ryojun College of Engineering was designed by architecture design organization of Kwantung TOTOKUFU (都督府). Looked from these names, these two organizations were totally different, however in fact, they had intimate relationship, like a kind of blood relationship. First, from the relationship of owners of these two organizations, they were interconnected with each other. Kwantung TOTOKUFU (都督府) was Japanese colonial rule government institute in Kwantung Leased Territory; SMR. Co. nominally was a company, but actually it was a spokesman of Japanese government in Manchuria. Both of them were colonial institutions in Kwantung Leased Territory, responsibility of these two organizations was divided by function, SMR. Co was in charge of city municipal construction, mineral development, education, health care and other affairs, and had executive power in Kwantung Leased Territory and SMR. Co. Cities, while Kwantung TOTOKUFU (都督府) was in charge of military, police patrol and ensure of security work along the railway in SMR. Co. Zone. Meanwhile Kwantung TOTOKUFU (都督府) supervised work of SMR. Co, and president of SMR. Co was top advisor of Kwantung TOTOKUFU (都督府). In early period of colonial rule, headquartered of SMR. Co was in Dalian, while Kwantung TOTOKUFU (都督府) set army stations in Lushun (旅顺). That is easily to find that these two institutes were directly under the Japanese imperial government, that had different division, but complement and contain each other, they were two brothers with a deep blood relation. Therefore, design institutes in these two organizations naturally had this kind of closely relationship. Secondly, from the view point of staff composition and origin of these two organizations, it is obvious that their relationship is consistent approximation. On the one hand, Yamaji (山路魁太郎) (graduated from Civil Engineering Department of Tokyo Imperial University in 1898), Mayeda (前田松韻)(graduated from Architecture Department of Tokyo Imperial University in 1904), Kuratsuka(倉塚良夫) (graduated from Architecture Department of Tokyo Imperial University in 1898) were the key member of DOBOKUKA (土木課) of when its established. Then in 1907, Mayeda (前田松韻) appointed to Tokyo Higher Technical School (Tokyo Institute of Technology) as a professor and left Kwantung TOTOKUFU (都督府), and then Matsumuro(松室重光) (graduated from Architecture Department of Tokyo Imperial University in 1897) was recommended into this organization by Tatsuno (辰野金吾) in a key position[132]. On the other hand, in MANTETSU KANTIKUKA (満鉄建築課) main members were Onogi (小野木孝治) (graduated from Architecture Department of Tokyo Imperial University in 1899), Oota (太

田毅) (graduated from Architecture Department of Tokyo Imperial University in 1901), Yokoi (横井謙介), Ichida (市田菊治郎) (graduated from Architecture Department of Tokyo Imperial University in 1907). It is not hard to see they all graduated from Tokyo Imperial University and most of them were from the same department, Architecture Department , which taught by Tatsuno (辰野金吾). In the last paragraph, this research has discussed status and influence of Tatsuno (辰野金吾) in Japanese architects, so this kind of relationship as fellow disciples , this two organizations certainly had closely relationship although they were in different institutes. In this study, the relationship between these two organizations was defined as "blood" relationship. And also because of this relationship, these three campuses had similar architecture and planning design style.

In addition, this research has one contribution that verifies besides Yokoi (横井謙介) there was another major designer OKA (岡大路) (graduated from Architecture Department of Tokyo Imperial University in 1912) who designed campus of South Manchuria Industrial School in the mid to late period. In 1912 after he entered SMR. Co, he took charge of parts of construction works as design supervisor from the campus starting construction. In the mid to late period of school development, as a professor and principal of the school, he played an important role in maintain architecture style of the school.

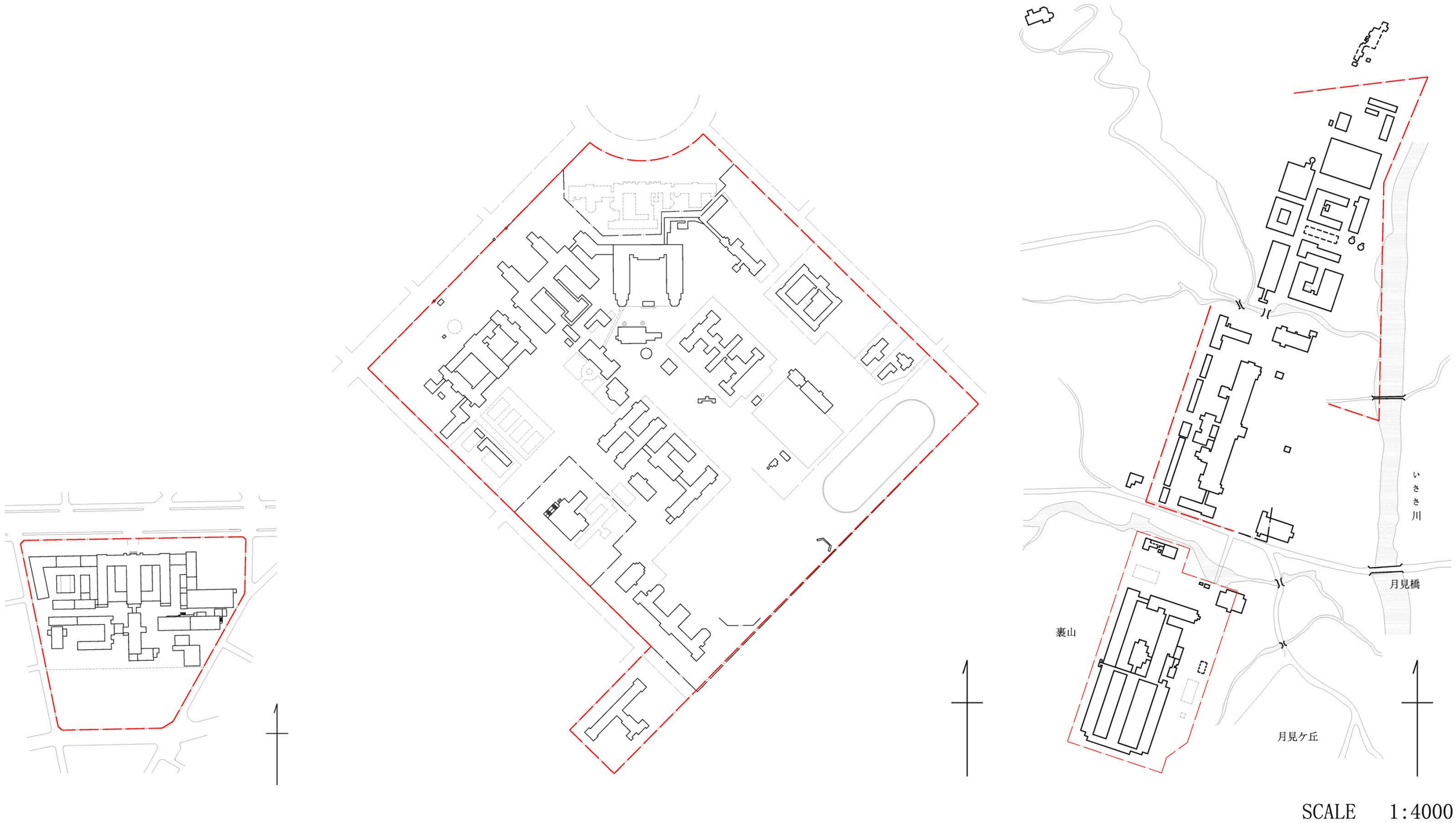
About design idea of these three schools, besides major building of Ryojun College of Engineering, in the beginning period, the buildings of these three schools mainly used 'Brick Masonry Structure (煉瓦造)' architecture technique, which was usually used by Japanese colonists and seemed like a kind of eclectic style which mixed various styles. Although they were identified as Japanese Colonial Architecture Style, their morphology was not the same. Buildings in South Manchuria Industrial School belong to Neo-Renaissance Style with Gothic Revival; buildings in Manchuria Medical College in early period belong to eclectic style with Art Deco; and buildings in Ryojun College of Engineering in early period belong to eclecticism style with Russian style and in middle to late period they continued eclecticism style, but a little change. Buildings in South Manchuria Industrial School basically remained early architectural style, however main buildings in Manchuria Medical College and Ryojun College of Engineering were more like Neo-Renaissance's eclecticism style. Although architecture style of these three schools is different, there is one same characteristic that is architecture style in later period, more simplified.

About design strategy of these three schools, campuses of South Manchuria Industrial School and Manchuria Medical College were used entirely new way to build, however Ryojun College of Engineering was converted from original buildings. There is one point must be clarified that site areas of these three campuses were different (Figure 4-59). Site area of South Manchuria Industrial School was about 36,600m^2, site area of Manchuria Medical College was about 201,000m^2, and site area of Ryojun College of Engineering was about 239,700 m^2. As you see, site areas of Manchuria Medical College and Ryojun College of Engineering were similar, but site area of South Manchuria Industrial School was about one fifth of the other two. Range of campus limits design strategy used in campus transition process, and also because of that there was huge difference in campus morphology. South

Manchuria Industrial School which was in limited area used intensive and centralized campus developing strategy that although there was a clear zoning plan in the campus, because of high-density buildings this zoning plan was not obvious. For Manchuria Medical College and Ryojun College of Engineering, because of enough site area in the same prediction of zoning plan, they were non-intensive, distributed adding buildings method. Each building had its own separated area which formed clear density campus morphology.

This point could be clearly reflected from building density of each campus. In 1913 and 1914 when these three schools were just established, building density of South Manchuria Polytechnic School was 11.28%, building density of South Manchuria Medical School was 8.23%, and building density of Ryojun Engineering School was 8.39%. And in 1940s when was the end of these three schools, building density of South Manchuria Industrial School was 30.62%, density of Manchuria Medical College was 14.8%, and density of Ryojun College of Engineering was 11.27%. First, it is easy to find that in the beginning of these three schools were established, building density was not so different. Whereas in the late period of schools developing, building density of South Manchuria Industrial School was 2.1 times of that of Manchuria Medical College, and 2.7 times of that of Ryojun College of Engineering. This proves that compared to the other two campuses, South Manchuria Industrial School had characteristics of centralization and intensification development. Second, in three decades of campus evolution, building density of South Manchuria Industrial School came up 2.7 times than before, Manchuria Medical College came up 1.8 times, while Ryojun College of Engineering only came up 1.3 times. This shows that in the beginning of establishment, Ryojun College of Engineering had completed most of necessary infrastructure for the whole campus. In contract, infrastructures of Manchuria Medical College and South Manchuria Industrial School were gradually built based on the requirement. In addition, these two campuses both had great renovation and reconstruction, but not very obviously reflected to their building density, so actual construction amount were more than the data listed.

Three Campus Comparison



Nanyuan Campus

Site Area: 36600m^2

Campus of Manchurian Medical College

Site Area: 200997.51m^2

Campus of Ryojun College of Engineering

Site Area: 227330m^2

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

4.4.2 Comparative Analysis Campus Transition Processes and its influence on Urban Surrounding

There are lots of similarities in design techniques and evolution process of the three campuses. For design method of campus planning, the most obvious one of these three campuses is the relationship between campus buildings and urban road in surrounding area. In the area of urban planning and architecture design, this manifested as axial relationship. For South Manchuria Industrial School, in the early time of established, it was located in Fushimi-dai (伏見台) of Dalian western suburb area. This area is the end part of main axis of baroque urban structure in Dalian, so as the main axis of urban structure, Fushimi-machi (伏見町) became the main road in Fushimi-dai (伏見台). In 1912, based on this road, the campus planning was beginning to design. Main building of the school was designed to face to and parallel with the road. Therefore, campus axis system was defined to parallel with the road in horizontal and perpendicular with the road i n vertical. The horizontal axis controlled the buildings extension, and the vertical line controlled scope and function zoning of campus developing. Also this kind of campus axis system that was perpendicular to the main city road was also happened in Ryojun College of Engineering and Manchuria Medical College. This can be considered as the most direct impact on campus planning developing by urban environment.

As for South Manchuria Industrial School, the evolution of campus had followed this axis for more than 30 years, so buildings which were built before 1945 maintained the interactive relationship of balance, coordination and mutual. Also this axis system played a role of basic control in the evolution of the other two campuses.

The second influence of campus planning and evolution by the city is reflected in that campus planning was influenced by planning and structure technique. In colonial urban planning, the planning system according to races is a common urban planning technique which appeared in British colony of Singapore in 1822[133]. This kind of urban planning method is very evident in urban planning of Dalian. In Russian version of planning in 1900, the city of Dalian was divided into three parts: administrative zone, European zone and Chinese zone. After 1905 when Japanese occupied Dalian, they fellow this urban planning technical, although they weakened this kind of zoning method which allowed part of cross-section class life, but this zoning technical still existed in the city. At least in urban planning of Dalian in 1909, the Japanese zone and the Chinese zone were still obviously existed. This zoning technical reflected to Nanyuan campus, it turned into some function zone like teaching zone, auxiliary zone, and sports zone and so on. Also this zoning technical was used in the city of Ryujun(旅順) city and Houten (奉天) city, so to campus planning of Ryojun College of Engineering and Manchuria Medical College. Because South Manchuria Industrial School did not recruit Chinese students, so there was no especial area for Chinese students. However in the other two schools, due to recruit Chinese students, there were especial areas for Chinese students such as classrooms, dormitories and cafeterias. Beyond socio-

political factors, just talking about phenomenon of school zone, it is easy to see that natural attitude of racial discrimination was deeply inside of colonists planning thought, and also they were deeply influenced by surrounding urban environment.

Of course, relative to urban planning, campus planning used function zoning method to plan, the mainly considered point was not to divide race, but a more important matter was to ensure order of function use. For this reason, in more than 30 years of evolution, school constructions still maintained campus structure which formed in the early time of school established that different functional buildings set in different functional zones. In current collected literatures, description of this kind of campus zoning design could not be found, so this research suggests that using zoning design in higher educational campus planning in Kwantung Leased Territory was dominated by a subconscious of designer, and was a common characteristic though subtle but real one.

Now scholars believe that establishment of university campus can promote urbanization (木方十根 2010). In this research, this effect was proved to be existed. Meanwhile, this study suggests that compared to macro-urbanization, the influence by higher educational campus to surrounding region was more obvious. In Commonsense, after campus establishment, the various ancillary facilities will be huge influence to development of the surrounding region. However, if the city structure was deeply analyzed, there will be more conclusions. As discussed above, from 1912 when Nanyuan campus established to 1945 when Japanese colonial rule ended, there was zonation school distribution around Nanyuan campus, which was the most direct influence to its surrounding environment. The same influence was more obvious in the campus of Manchuria Medical College, which surrounding areas turned to educational core area of Houten (奉天) New city. It also happened in the campus of Ryojun College of Engineering, because Ryujun(旅顺) was a military city, the influence was not very obvious. Therefore, this kind of influence that because of College campus established, surrounding areas turned to city educational area, was highly confirmed. This is also the most important conclusion of this study about the topic that high educational institutions in Kwantung Leased Territory influenced urban surrounding environment.

4.4.3 Expounded the reason for the Similarities of Campus and Its Urban Surrounding

By analytical comparison, discerned that there was quite close interaction influence between these three schools and its located cities. So what is the main reason for this correlation generated? Until now there were no finding of the related answers. By reading historical literatures, it is found that campus designers may be the main factors to lead to the influence relationship between the campuses and the cities. The designer of Nanyuan Campus was MANTETSU KANTIKUKA (満鉄建築課), and urban planning of Dalian city was completed by Kwantung TOTOKUFU (関東都督府) DOBOKUKA (土木課) and MANTETSU KANTIKUKA (満鉄建築課); the designer of Ryojun College of Engineering was Kwantung

TOTOKUFU (関東都督府) DOBOKUKA (土木課), and its located city - Ryujun(旅順) city was also designed by Kwantung TOTOKUFU (関東都督府) DOBOKUKA (土木課); the campus of Manchuria Medical College was designed by MANTETSU KANTIKUKA (満鉄建築課), and Houten (奉天) new city was designed by MANTETSU KANTIKUKA (満鉄建築課). These three campuses and these located cities shared the same or the relative architecture organization, so this research has a hypothesis that the historical fact of shared designers may be the most important reason that leads the influenced relationship generated between the campuses and the cities.

The most supporting evidence for certifying the hypothesis was that the interaction influence relationship between campus of South Manchuria Polytechnic School and the city of Houten (奉天). As clarified above, in Houten (奉天) New city that was established in 1908, the first established two main infrastructures was Houten New Station that located in the heart of city and Houten Hospital buildings (changed to school in 1911) that located in the corner of the large central square. It is observed that the hospital site selection was deliberately set in the corner Xiaoximen (小西門) towards the direction of old city, which explained that the planner wanted to use the mutual effects between this two infrastructures, railway station and hospital, to promote urbanization progress. In the map of Houten (奉天) New city of 1915, this kind of layout was proved to be effective. Shotoku Avenue (昭徳大街) between the two infrastructures became the most bustling main street in Houten (奉天) New city, lots of buildings were completed and the right part of the city was basically completed. In order to promote left part developing, a new park planned in the area, which was symmetry with the school by the axis of the city in the left part of the city, which also played the role of promoting urban developing. At that time, a triangular relationship conformed by three main city infrastructures in Houten (奉天) New city. In the map of 1926, it is easy to see that the area that influenced by this triangular relationship has been basically completed process of urbanization, and a series of schools selected the sites in this area which was between Chiyoda Park and Manchuria Medical College. Of course, we do not know that the reason of formation of this kind of educational gathering generated by urban planners imposed or own choice of the schools, but whatever, it could be clear that establishment of a College campus leads to the other schools gathered to its surrounding. The same explanation can be applied to the relationship between Nanyuan campus and Dalian city. Just because the city was planed by two design organizations, the factor of designer was hidden and not so obvious.

4.5 Summary

By analytical research on the two comparative cases, this research summarized that high educational institutions in Kwantung Leased Territory and SMR. Co. Zone have something in common, such as the typical '日' type plane form, the Japanese Colonial Architecture Style with the brick masonry structure. Also it is found that there were some unique characteristics in Nanyuan Campus, such as specific Gothic style factors in Dalian city, intensive and centralize campus evolution process, remained complete and unified architecture image though constantly set up new buildings in the past 30 years and so on. Meanwhile, the research also proved the interaction influence of close relationship between campuses and their urban environment. However, these factors are objective phenomena that express in architecture and urban plan, and the immanent factors that promote the developing of schools and cities are the root of these expressions.

Just in order to meet the needs of colonial rule, all of the high educational institutions that established in Kwantung Leased Territory were engineering colleges for training engineering and technical personnel. So there were no high educational institutions on basic disciplines. A large number of technical graduates on mineral exploitation, municipal construction, and transportation development were supported for colonial. The most direct case was that around 1983 in order to meet the needs of plunder and war Applied Chemistry was immediately established in South Manchuria Industrial School and Ryojun College of Engineering. The functions that needed by colonists were expressed to establish new buildings for new academic departments. Unlike today's universities was given the mission of training various professional and science research by society, the universities on that time were established for a tool to accelerate colonial plunder.

There seemed no relationship between colonial rule and the influence to city that generated by university, however in the expression of Goto (後藤新平) was more clear: ' *In colonial areas if there was no infrastructures like schools, hospitals and temples that were satisfied by the residents, there would not make the determination of the residents to live for a long time.*' [134] In fact, these primary and middle schools were not only for educating generations of colonists themselves, but also played a role of enslaving the colonized mentally. They are considered as an important tool to achieve spirit rule to the colonized[135]. A large number of public schools were established to enroll Chinese students, but in class they must speak Japanese, and were arranged a required activity that worship Tenno (天皇) everyday, which was very obvious to be a gradual enslavement in spirit of the colonized. For Japanese colonialists at that time, Kwantung Leased Territory was Japanese land though border with China mainland, and it was a pure Japanese society, so implemented education system of 'Assimilation (内地(日本)延長主义)' in Kwantung Leased Territory[136]. This research suggests that by domination of such nativist consciousness, education was raised to an important position in Kwantung Leased Territory and other SMR. Co. Zone. With this premise, lots of schools gathered around the campuses of high educational institution, which were the highest level in them, became possible.

Chapter 5

Analysis the Morphology Transition Progress of DUT`s Campuses after 1945

5.1 Clarify the Historical Background of Codependent Double Campuses of DUT

5.1.1 Background of the New Campus Build-out[137]

As mentioned in the chapter 2 that there was no campus construction work finished during 1946~1949, however, starting from 1950, there was a big development happening in the Nanyuan campus, or to be more accurate, for its user, the Dalian Institute of Technology. In the beginning of 1950, there were only 29592 m^2 of buildings used for the institute, and until the end of 1950, the campus had not satisfied the institute's need yet. Therefore, in March of 1951, the Machinery campus (機械館)[138] was constructed in the piedmont of a hill south of the Nanyuan campus. It was used for classrooms and a dormitory for the high-grade students. However, the demand for the education space as a problem was still unresolved in the institute.

In 1951, with the permission by the Ministry of Industry of the Northeast People`s Government, the institute decided to establish a new and large campus in the suburb area of Dalian city. Soon, Qu Bochuan (屈伯川), Wang Tan (汪坦) and others started to look for a suitable site. There were two sites chosen in the beginning, the first site near the Fujiazhuang (傅家庄) resort, the second site in the Lingshuidun (凌水屯) area. Based on the comparison, the institute decided to chose the new campus site in the Lingshuidun (凌水屯) area, which is on three-sides hugged by mountains and facing to the sea. At that time, the site of more than 100 Hectares, was wasteland and farmland. About 30 families lived there. Inside of it, there was 15.13 Hectares private land, including a large apple orchard that was owned by Zhang Benzheng (张本政), who was a landowner in Japanese colonial period.

In the autumn of 1951, 22 students of the Harbour discipline of the Civil Engineering department (土木系海港组), who had just been mapped the Bijia Mountain Reservoir (笔架山水库) project[139] one or two months before, began to map the new campus site that guided by Prof. Hou Mutang (侯穆堂). Through more than 10 days hard work, they finished the mapping work in this 1.4 Km wide and 2 km long site. As a result, they had drawn the accurate topographic map before the campus planning, which is shown in the Figure 2-13. In addition, there were 760,000 m^2 available lands which could be used for the first phase campus construction, which as another result, have been clarified by them.

In order to successfully carry out the campus construction work, the

Infrastructure Department (基建处) has been established by the institute, as a new department. The director was Yang Guozhen (杨国桢) and the deputy director general was Wang Tan (汪坦) who charged the campus planning and was the chief engineer of the project. Soon the first campus plan was finished within a short time, shown in the Figure 2-14. Actually, the 1950s were a very hard period for the new China, but in 1952 about 72,208,000,000 old Yuan (about 7,220,800 Yuan) were allocated to the Institute for infrastructure, as the Central People's Government (中央人民政府) paid great attention to the development of higher education.

In the spring of 1952, the land acquisition and the demolition work had been completed. Then the construction work of the Lingshui campus began, including the No.1 building (一号館), the No.2 building (二号館), the Thermal Engine Laboratory (熱機実験室) and the student dormitories No.1, No.2 and No.3. In order to strengthen the construction capability, the institute decided let the 17 students who belonged to the Architecture group of the department of Civil Engineer to take part in the campus-builting work as the final year's study. They were guided by Prof. Wang Tan (汪坦) and Prof. Xiao Zongyi (萧宗谊). Some of the students designed the details papers, some of them arranged the construction schedule and some of them charged the water supply and other infrastructure works. In addition the monitor of the class, Zhang Xiangjiu (张祥久), was appointed as the captain of the construction team. By the great effect denoted by them, in October of 1952, the No.1 building was constructed and the whole department of Mechanical Engineering (机械工程系) and the department of Naval Architecture(造船工程系) were moved there later. Moreover, the history must be remembered that two younger students of the Architecture group, Liu Jing (刘儆) and Shi Fuzhen (施福臻) lost their lives at the campus construction, due to an engineering accident caused by lightning weather. In July of 1953, these students graduated and were assigned to various parts of China to work. However, only Zhang Xiangjiu (张祥久) insisted to retain to work in the institute after graduation until retailed. He had been assigned as the director of the construction department, the vice-dean of the institute and the first president of the Design Institute of CML Engineering & Architecture of DUT[140] before he retired. He has planned a campus planning in the 1950s (Figure 5-1), but in the end almost all was changed to a new plan. All in all, he was not the main planner of the campus, but he organized it for more than 40 years.

Starting from this period, the Institute official developed itself into a multi-campus evolutional mode.

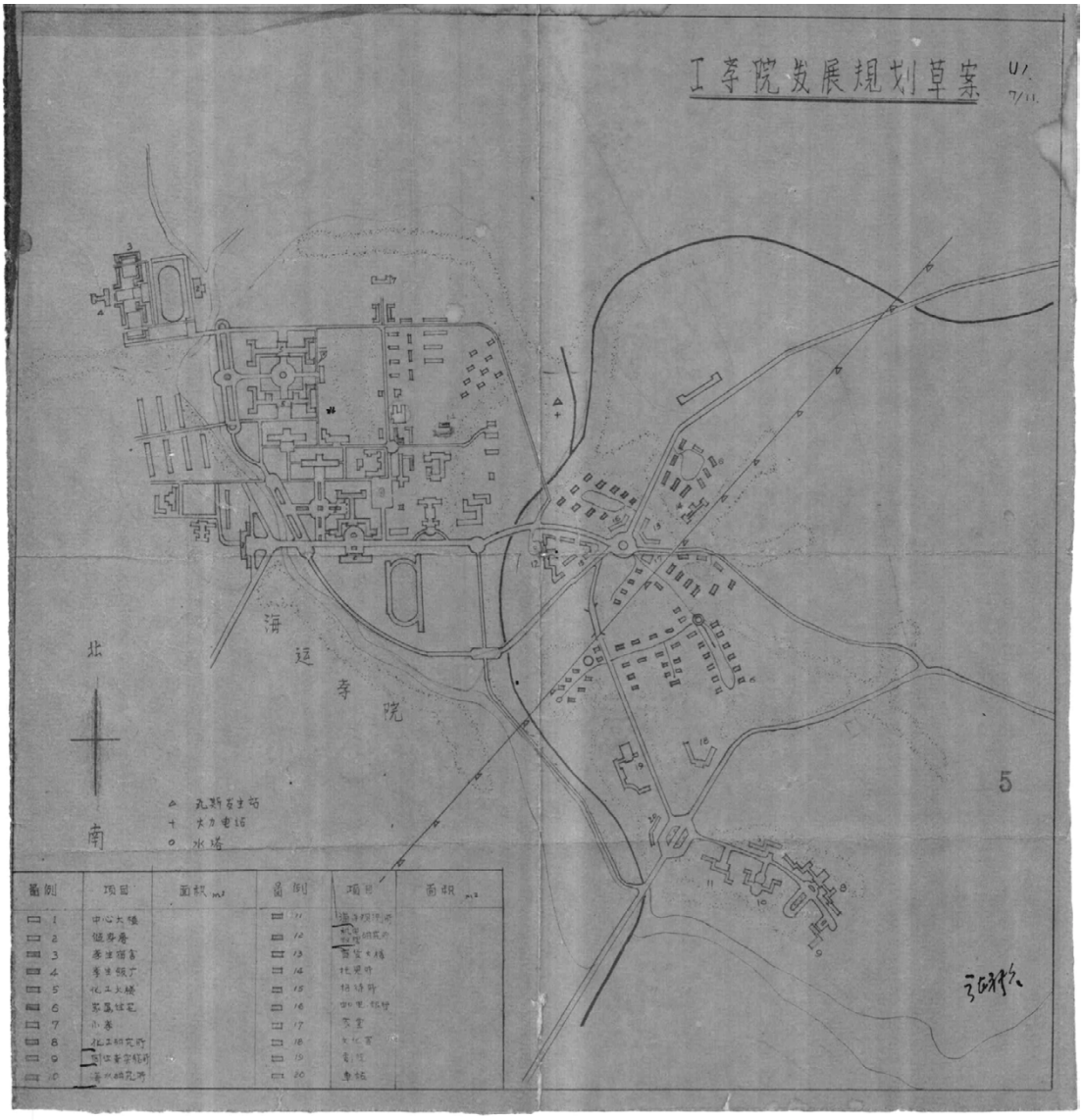


Figure 5-1 Planning for the Lingshui Campus in 1950s

5.1.2 Wan Tan and Qu Bochuan With the Campus Planning

Wang Tan, the main planner of the Lingshui Campus and the main designer of the build-out of the Downtown campus, was born in May 14, 1916 at Suzhou (蘇州) in Jiangsu province and passed away in December 20, 2001 in Beijing (北京). He is well-known as a professor of the Tsinghua University (清華大学) and the Dalian University of Technology, also as a architectural theorist, educationist and historian. Moreover he is considered as the founder of the modern Chinese architectural history.

In July 1941, he graduated from the department of Architecture of the National Central University (国立中央大学)[141] in Chongqing (重慶), after that he

worked with the famous Architect Tong Jun (童寓) in the Allied Architects (华盖建築師事務所). In 1943 he was hired by the National Central University and taught in the department of Architecture. Then, in 1944 he joined the army until China won the WW II in 1945. After he demobilized from the military, he worked in the well-known Xingye Architects (興業建築師事務所) until he went to study on abroad. During February 1948 till March 1949, he traveled far away to study in the United States and under the tutelage of the world-renowned architect Frank Lloyd Wright. He was recommended by Zhou Yixian (周仪先), who is well-known by another name: 'Lin Po (林坡)'[142]. Before the establishment of the People's Republic of China, he and his wife, Ms. Ma Siju (马思琚), returned to the motherland with breakthrough of obstacles, by helping from the underground organization of the Communist Party of China (中国共産党地下組織), from Shanghai to Hong Kong with a USA ship named 'General (将軍号)'[143], then through Korea and finally arrived in Dalian by the Soviet AZOV ship on 28th May, 1949. They were the first experts returning to the Northeast region after the liberation[144].

Between December 1949 and December 1956, he worked as a professor of the Dalian Institute of Technology and also served as the secretary general of Dalian CPPCC (Chinese People's Political Consultative Conference). Starting from 1951, he was appointed as the deputy director general of the Construction Department of the Institute (基建処) and in charge of the Campus planning work. During this period, the No.1 building (一館), the No.2 Building (二館), the Water Conservancy Building (水利館), the faculty dormitories in Lingshui Campus, the Machinery campus (機械館) among others were designed by him before 1956. In addition, he served as the team leader (教研組組長) of the department of Water Conservancy (水利系). Then, from January 1957, Wang Tan was invited as a coach the Department of Architecture of the Tsinghua University (清華大学) and served as deputy director of the Department of Architecture[145].

His brief biography is shown in the Table 5-1.

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

Date	Important Information and Dates	Remarks
1916/05/14	Born in Suzhou city of Jiangsu province（江蘇省蘇州市）	
1941/07	Graduated from the Architecture department of the National Central University	The Classicism Architecture Period.
1941/07~ 1943	Worked in Allied Architects	
1944~1945	Taught in the National Central University, and then enlisted in the armed forces[146]	
1945~ 1948/01	Worked in the Xingye Architects in Shanghai	
1948/02~ 1949/03	Studied in the Frank Lloyd Wright School of Architecture at Taliesin in USA.	The Modernism Architecture period
1949/03/28	Form Shanghai, though Hong Kong, Korea, Shengyang, arrived at Dalian. He got help by Wang Jiqi (汪季琦) and Sheng Qiyi (沈其一).	
1949/04~ 1956/12	Worked in the Dalian Institute of Technology as Professor. In the same time, he also served in the Dalian Government. But he was directly under the State Council[147].	
1951~1956	Planned the Lingshui Campus of Dalian Institute of Technology and Designed some of the main buildings.	
1957/01~	Taught in Tsinghua University until his dead in 2001.	
1958	The member of the Leading Group Office of the 'Ten Great Buildings' project[148] (国庆工程).	
1959~	The first dean and the chief architect of the Architectural Design and Research Institute of Tsinghua University.	
1979	Led the Chinese Architectural Education Delegation to visit the United States.	
1980	As the journal President of ' World Architecture', he founded China's first university publishing academic journals of architecture 'World Architecture'.	
1984	Helped to found the department of Architecture of the Shenzhen University (深圳大学) and the Institute of Architecture Design & Research of The Shenzhen University.	
1985	Helped to founded the 'World Architecture Review (世界建筑导报)' Magazine.	
1985	Served as the professor of the Architecture department of the Dalian Institute of Technology.	
1985/04	Raised the importance of the research of Chinese modern architecture history in the report '关于进行中国近代建筑史研究的报告'[149].	
1985/08	Initiated and presided the 'Chinese Modern Architecture Historical Research Symposium (中国近代建筑史研究座谈会)' in Beijing[150].	
1988/02	Led the Chinese Modern Architectural Delegation to visit Japan.	
1988/05	The archives establishment work of Chinese modern architectures was launched as a cooperation project with a number of International Institutions, such as the University of Tokyo.	
1996/02	As the chief editor, the series of books of 'The Architectural Heritage of Modern China (中国近代建築総覧)' has been published. It contains 16 volumes.	
1997/08	The '近代建築史学術委員会' was established under the Architectural Society of China.	
2001/12/20	Dead in Beijing.	

According to his biography, it is easy to find that he has received two kinds of different architecture education: the Classicism one and the Modernism one. From his own memory, he believed that the study experience in Taliesin with Wright had influenced his design ideology very much. Thus, in the planning of

the Lingshui campus, the 'Organic Architecture' philosophy was deeply applied in the campus plan. There is no main axis and no obvious in hierarchical relationship in the campus, but it is balanced, due to the part that for teaching buildings and the dormitories were encircled by the Lingshui River homogeneously. But after 1962, this organic form of the Lingshui campus was changed, caused by the construction of the Main Building (主楼), which was a decision by Qu Bochuan (屈伯川). Starting form this period, the campus planning ideology was closed to the 'Soviet Pattern' gradually (Figure 5-2).

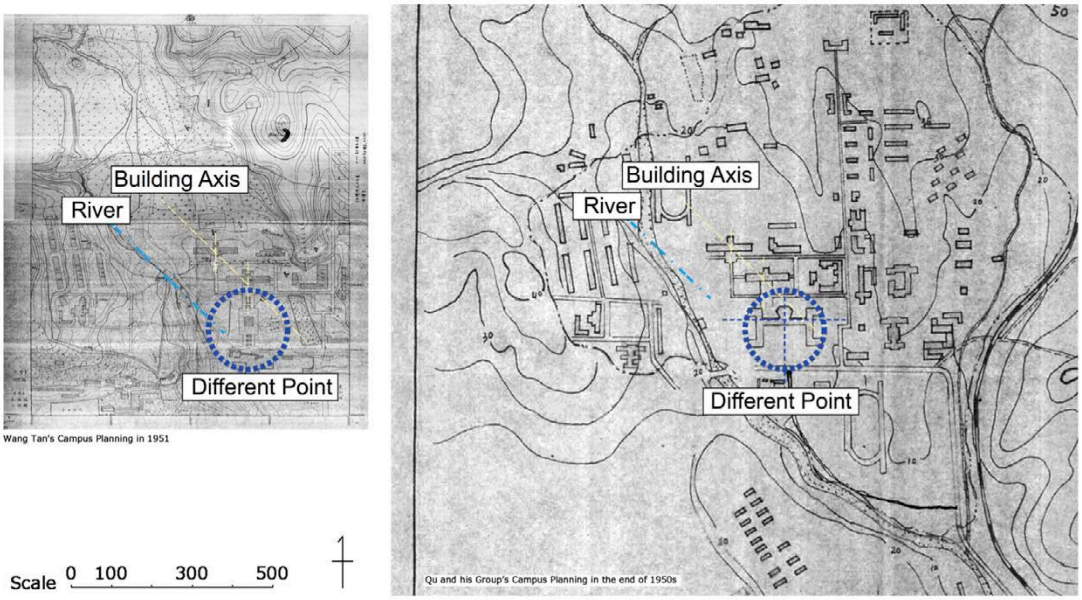


Figure 5-2 The Difference of the Two Campus Plans, Wang's one and Qu's one

From the Interview of Xu Qingxi (眭庆曦), it is deemed that the planning ideology change mainly affected the Dean of the Institute, Qu Bochuan (屈伯川). Based on the records in the 'China Modern Educator Biography (中国现代教育家传)', Volume 3[151], his brief biography is shown in the Table 5-2.

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

Date	Important Information and Dates	Remarks
1909/11/16	Born in Lu Country of Sichuan Province (四川省瀘県).	
1928/02~ 1928/07	Studied in the preparatory department of the Private University of Naking (金陵大学予科)	
1928/09~ 1932/06	Studied in the Chemical Department of National Central University (中央大学化学系)	Be expelled, due to he was a revolutionary
1934/09~ 1935/08	Went abroad. Studied in the Technical University of Munich & the Technical University of Berlin in Germany.	He joined in a student union of the CCP in May 1935.
1935/09~ 1938/01	Studied in the Dresden University of Technology as a researcher and obtained his Ph. D. in the Chemical Engineering.	
1938/04	Back to China. Firstly to Wuhan (武漢), then went to Chongqing (重慶). In the dormitory of the Central University, he was contacted with the CCP.	
1938/06~ 1939/09	Joined in the China Science Academy (中華自然科学社) in Chongqing (重慶).	
1939/09	Went to Yan'an (延安) followed Lin Boqu (林伯渠)[152] and Wu Yuzhang (吴玉章)[153].	
1940/01~ 1940/08	Was appointed as the director of the Yan'an Xinhua Chemical Factory.	
1940/09	Joined the CCP officially.	
1940/06~ 1941/04	Was responsible for the preparation of Yan'an Academy of Natural Sciences and served as the Director of the Education Department.	
1941/05~ 1942/01	Study in the Yan'an Marxism-leninism College (later merged to the Central Party School of the CCP).	
1942~1946	Worked in the Yan`an and Zhang Jiakou (张家口) in some key positions.	
1947/05~ 1949/03	Was appointed as the Dean of the Kwantung Industrial Academy (関東工業専門学校).	
1948/11	Took over the SMR. Co. Central Research Center (満鉄中央試験所).	
1949/04~ 1950/07	Was appointed as the Dean of the Engineering College of the Dalian University (大連大学工学院) and the Director of the Chemical Research Institute(化学研究所), which was reused of the SMR. Co. Central Research Center (満鉄中央試験所) after the 1948.	
1950/07~ 1981/09	Was appointed as the Dean of the Dalian Institute of Technology and other key positions.	
1956/11	Visited Soviet Union with the Chinese higher educational delegation.	Deep Influence
1957~	'Planned' the Lingshui campus, and was in charge of the campus construction. In 1962, the Main Building was constructed in 'Soviet Pattern'.	
1966/08~ 1972/02	Was persecuted in the 'Great proletarian Cultural Revolution(无产阶级文化大革命)' and examined in isolation.	
1972/03~ 1978/08	Resumed to work in Dalian Institute of Technology and was appointed as Deputy Director of the Revolutionary Committee and the Deputy Secretary of the CCP Committee of the Institute.	
1980/08/18	Found the first MBA program of China, 中国工业科技管理大连, in the Dalian University of Technology that based on the Sino-US Cooperation Agreement.	
1980/10	Led the Chinese Chemical Researchers Delegation, which organized by the Ministry of Education of China, to visit Germany.	
1981~ 1982/02	Study in the Central Party School of the CCP	
1981/09	Honorary President of the Dalian Institute of the Technology.	
1982/03	Was elected the Vice-president of the Liaoning Provincial Institute of Higher Education.	
1983/11	Was Appointed as the Vice-chairman of the School board of the new Dalian University that had been a branch of the Dalian Institute of Technology before.	
1988/02	Honorary President of the Dalian University of the Technology.	
1997/02/18	Dead in Dalian.	

According to his biography, it is easy to notice that he was neither a designer nor a planer, due to the lack of cord of an architecture study background. But he organized the campus construction work for a long time. In Xu Qingxi's memory, he mainly gave the construction ideology and the form he wanted, and then the design group of the Institute, such as Zhang Xiangjiu and others, did the plan & design works in detail. Moreover, the visit to Soviet Union in 1956 affected him deeply. After this trip, he decided to establish a Main Building (主楼) in the campus. It similar to the one in the Moscow State University with the '工' form plane that symbolized the power of the working class (Figure 5-3). Actually, this architectural style's building was so popular in China newly established Universities, such as the Main Building (1949) of the Harbin Institute of Technology (哈尔滨工业大学) (Figure 5-4), the Main Building (1960~1965) of the Tsinghua University (Figure 5-5) and so on. It was a special phenomenon in the special period of China, although the Lingshui campus did not use it due to Wan Tan's design philosophy, but finally, it was appeared in the campus after he left the institute. Definitely, the 'Soviet Pattern' was only charged on the campus construction work in that period, after Qu Bochuan retired in 1980s, there was more and more modernism style building was constructed in the Lingshui campus. Hence, the campus planning and building design ideology in the Lingshui campus was changed to non-uniform. Therefore, it is difficult to determine the properties of the campus.

Also, this phenomenon appeared in the downtown campus, but it is not so obvious, as there not that much land could be used for a large-scale construction.

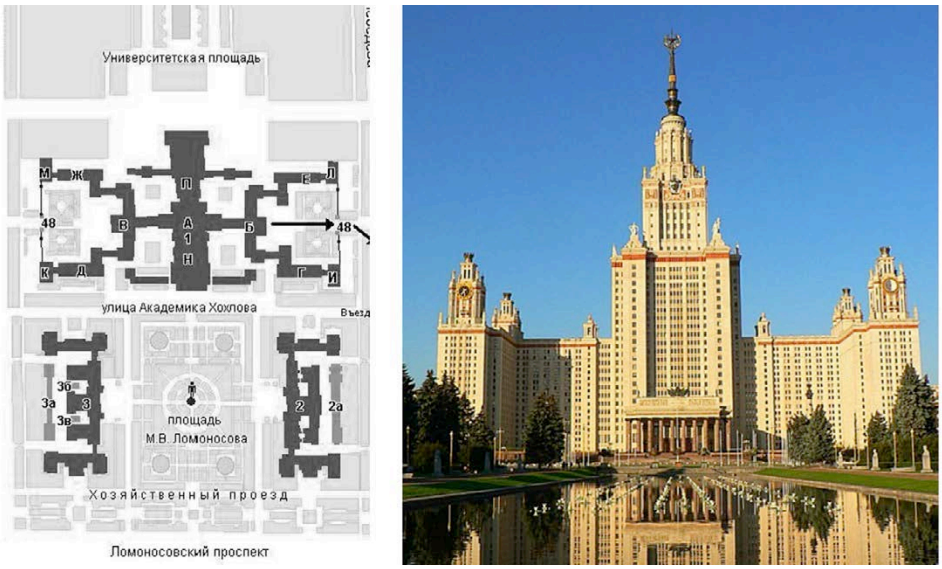


Figure 5-3 The Site Plan of the Main Building of Moscow State University

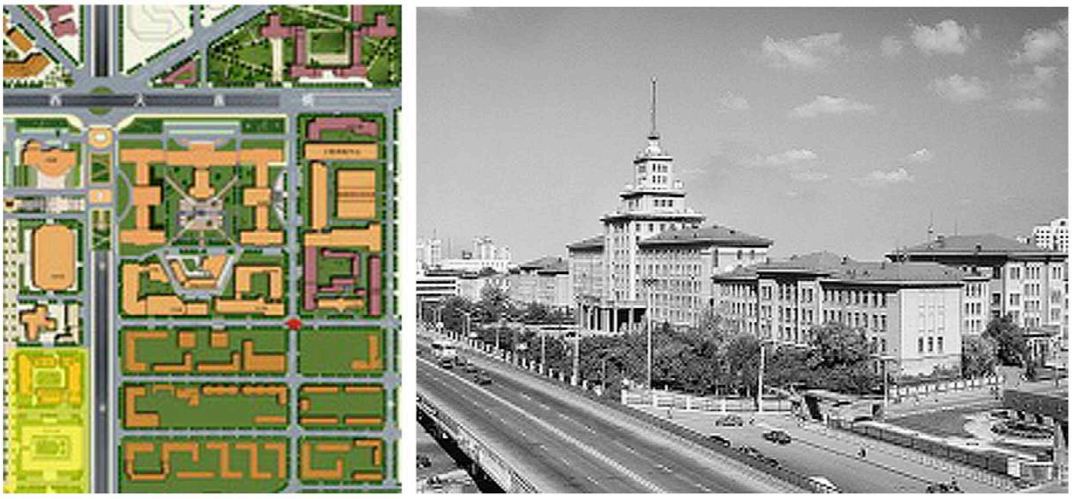


Figure 5-4 The Site Plan of the Main Building of Harbin Institute of Technology

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

5.2 Analysis the Morphology Transition of the Downtown Campus

5.2.1 Analysis the Transition Progress of Campus Site Plan

5.2.1.1 Evolutional details of the Downtown Campus.

It is easy to know that the Downtown campus consists by several parts, but only a few of people know how they have changed into a part of the Downtown campus (市内校区). As mentioned in the chapter 2, it mainly consists by the Nanyuan (南院), the Beiyuan(北院), the Dongyuan (東院) and the Machinery campus (機械館). Among them, the Nanyuan and the Beiyuan composed the Campus of the Kwantung Industrial Academy (関東工業専門学校) in 1946 when it was established[154], and the right of using this two campuses were given to the Academy by the CCP Lvda Committee(旅大地委). Later, in the year of 1951, after the Dalian Institute of Technology (大連工学院) was established the Machinery campus was constructed by the Institute itself. For the Dongyuan campus, it was bought to the institute in the year of 1958[155], due to the development requirement of the department of chemical and other reasons. Subsequently there were some other buildings around the Downtown campus which belonged to the Institute gradually, such as the health-center, and residential buildings. The details are shown as the Figure 2-1 and Figure 5-6.

In the following sections, the research will mainly focus on the Nanyuan Campus, in order to do a comparative analysis with the one before 1945.

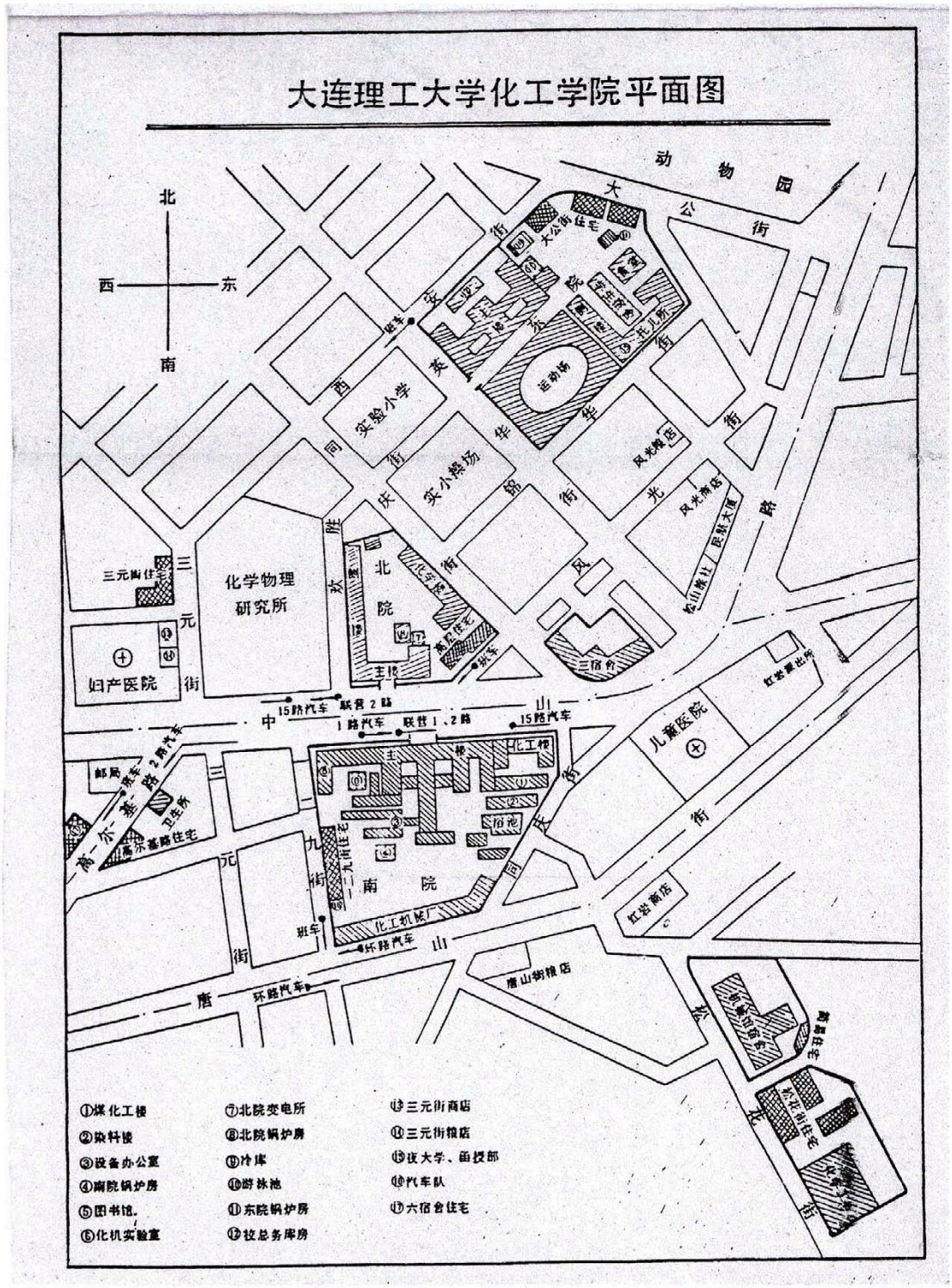


Figure 5-6 The Site Plan of the Downtown Campus in 1990s

5.2.1.2 Study on the Nanyuan Campus Planning Index

According to the historical documents mentioned above, the campus index after 1945 were restored by this research, which shown in the Table 5-3. Based on the indexes, the building density curve after 1945 was drawn as following (Figure 5-7).

Table 5-3 Indexes of the Nanyuan campus after 1945

Date(年)	Site Area（敷地面積）m²	Floor area（建坪）m²	%（建坪率）	（備考）
1945-50	About 36600	About 11711.40	32.00	The date of the Floor area is from the official record and the mapping maps.
1976		About 12214.34	33.37	
1979		About 14344.34	39.19	
1982/83		About 15139.78	41.37	
1987		About 16796.84	45.89	
1990		About 16699.84	45.63	
……		……	……	

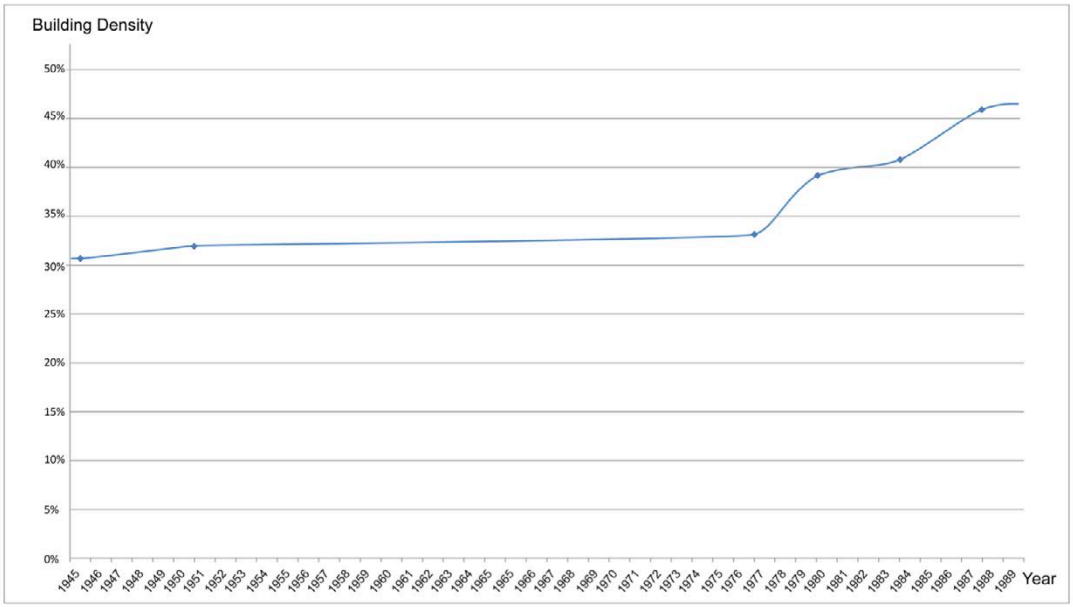


Figure 5-7 Building Density Curve of Nanyuan Campus after 1945

It is easy to find that there was almost no construction work finished in the Nanyuan campus until 1976, due to the flat trend in the curve. It is means that there was no build-out of the Nanyuan campus, except the enlargement work of the cafeteria in 1951. Just as mentioned above, the construction works of the institute mainly happened in the Lingshui campus, which was a new campus far

away from the Downtown campus during 1950~1966. From 1966 to 1976, it was the period of the ‘ Great proletarian Cultural Revolution (文化大革命)’ of the PRC. Its purpose was to enforce ‘communism’ in the country by removing ‘capitalist’, traditional and cultural elements from Chinese society, and to impose Maoist orthodoxy within the party. In this 10 years, almost all of the universities in China were suspended their normal works, for example, the teaching work. Basically the middle schools and universities’ students were changed their status as the revolutionaries, be called ‘the Red Guard’. In addition, the Communist Party instituted the ‘Up to the Mountains and Down to the Countryside Movement (上山下乡运动)’, in which "Educated Youths" (Zhishi Qingnian, 知识青年) in urban areas were sent to live and work in agrarian areas, in order to better understand the role of manual agrarian labor in Chinese society. After the first few years of the revolution, all levels educational institutions were subjected the devastation. Not only the old books in the library were burned, but also the teachers were humiliated publicly. Therefore, normal education system of China was totally stopped in that period, such as the universities were stopped the enrollment in more than 10 years. Caused by the misunderstanding of some epigrams and speeches by Chairman Mao, the intellectuals was the bottom strata of Chinese society. Even lots of the teachers of the university suffered the criticism and raid, due to their ‘reactionary remarks’. As for the campus construction, it is very simple to say, that it was impossible during this period. This is the main reason to explain why there was no construction work finished before 1976 in the Nanyuan campus, and also for the Lingshui campus.

After the revolution, the high-speed development and evolution appeared in the Nanyuan campus. From 1976 to the 1990s, a sharp increase is shown in the curve. In the campus, it is mainly shown as the land of the playground, which was key protected in the South Manchuria Industrial School period, was used to the built the chemical industrial equipment factory in 1979. In the beginning of the 1990s, there was 16699.84 m^2 land used to the buildings’ construction, nearly 1.5 times than in 1940s. It is almost half area of the Nanyuan campus site. There main reasons to explain this phenomenon have been clarified in the Chapter 2. One is the Dalian Chemical Engineering School (大連化工学校) was merged to the Institute in 1972. Another one is the decision of ‘The department of Chemical Engineering will use the Downtown campus for a long time’ 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 the Chemical Experiment Building (化工实验楼) and the 129st. Residence(129 街住宅) have been

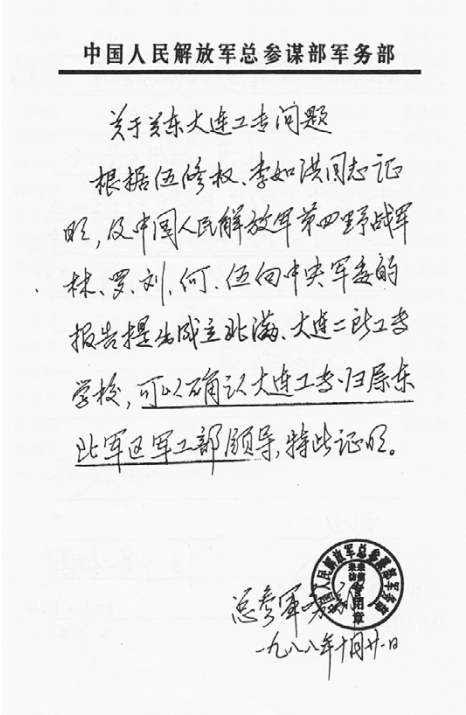
constructed in the Nanyuan campus during 1980s.

According to the statistics by the State-owned Department (国有资产处) of the DUT, there were about 45794 m^2 area added to the overall floorage of the campus until the 1990s. It is more than 3 times than the building area in 1948

5.2.1.3 Functional Influence: Orientation of University chose by Country

According to some historical documents of the university, it was known that the orientation of the university has been affect by the social-political deeply.

It was a little known fact that the predecessor of the Dalian University of Technology, the Kwantung Industrial Academy, was a military academy. The Figure 5-8 is a confirmation letter about the certificate of the Identity of the Kwangtung Industrial Academy, which was certified by the Military Affairs of the PLA General Staff Department (中国人民解放军总参谋部军务部) on 21th October, 1988[156]. It is said that the Kwantung (Dalian) Industrial Academy was a military school that had been organized by the Military department of the Northeast region of the PLA, based on the testimonies of Wu Xiuquan (伍修权) & Li Ruhong (李如洪) and the report to the Central Military Commission that suggested to establish the academy, which represented by Ling (林), Luo (罗), Liu (刘), He (何), Wu (伍) who were the leaders of the PLA IV Field Army. In addition, there is another history letter, as the Figure 5-9 showing, to explain the function of the Kwantung Industrial Academy, called '给中央军委副总参谋长伍修权同志的信', which is written by Li Dechang (李德常) on 20th June, 1985. It clarified, that the academy was an institute to train the military-technic cadres and was a factory to produce the gunpowder-maker machine and the raw material of gunpowder, which mainly was the potassium nitrate and potassium sulfate. Moreover, the academy also had the responsibility for the Marxist political education in that special period.


中国人民解放军总参谋部军务部

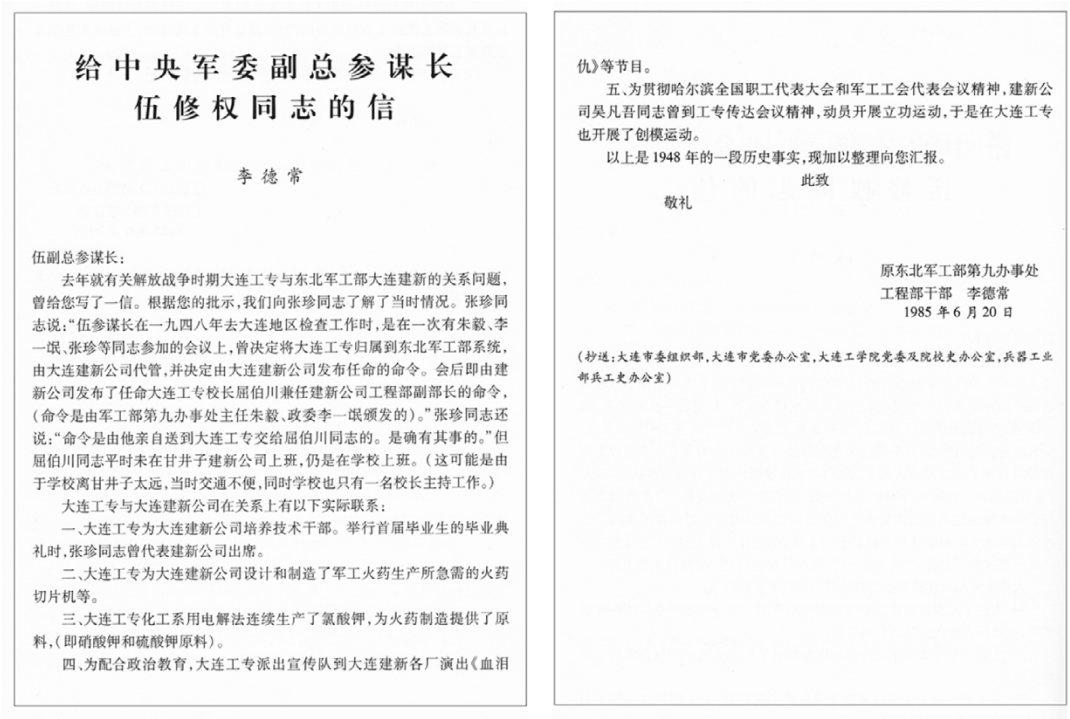
关于关东大连工专问题

根据伍修权、李如洪同志证明，及中国人民解放军第四野战军林、罗、刘、何、伍向中央军委的报告提出成立北满、大连二所工专学校，可以确认大连工专归属东北军区军工部领导，特此证明。

总参谋部军务部

一九八八年十月廿一日

Figure 5-8 The copy of the Official Confirmation Letter about the Certificate of the Identity of the Kwangtung Industrial Academy



给中央军委副总参谋长
伍修权同志的信

李德常

伍副总参谋长：

去年就有关解放战争时期大连工专与东北军工部大连建新的关系问题，曾给您写了一信。根据您的批示，我们向张珍同志了解了当时情况。张珍同志说："伍参谋长在一九四八年去大连地区检查工作时，是在一次有朱毅、李一氓、张珍等同志参加的会议上，曾决定将大连工专归属到东北军工部系统，由大连建新公司代管，并决定由大连建新公司发布任命的命令。会后即由建新公司发布了任命大连工专校长屈伯川兼任建新公司工程部副部长的命令，（命令是由军工部第九办事处主任朱毅、政委李一氓颁发的）。"张珍同志还说："命令是由他亲自送到大连工专交给屈伯川同志的。是确有其事的。"但屈伯川同志平时未在甘井子建新公司上班，仍是在学校上班。（这可能是由于学校离甘井子太远，当时交通不便，同时学校也只有一名校长主持工作。）

大连工专与大连建新公司在关系上有以下实际联系：

一、大连工专为大连建新公司培养技术干部。举行首届毕业生的毕业典礼时，张珍同志曾代表建新公司出席。

二、大连工专为大连建新公司设计和制造了军工火药生产所急需的火药切片机等。

三、大连工专化工系用电解法连续生产了氯酸钾，为火药制造提供了原料，（即硝酸钾和硫酸钾原料）。

四、为配合政治教育，大连工专派出宣传队到大连建新各厂演出《血泪仇》等节目。

五、为贯彻哈尔滨全国职工代表大会和军工工会代表会议精神，建新公司吴凡吾同志曾到工专传达会议精神，动员开展立功运动，于是在大连工专也开展了创模运动。

以上是1948年的一段历史事实，现加以整理向您汇报。

此致

敬礼

原东北军工部第九办事处
工程部干部　李德常
1985年6月20日

（抄送：大连市委组织部，大连市党委办公室，大连工学院党委及院校史办公室，兵器工业部兵工史办公室）

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'

After the Dalian University was established in 1949, out of the military system and was changed to a normal university. But, it was still under the charge of the country and no self-management right in the early years of PRC. The most unexpected and shocking thing is that some advantage majors of the university were given to some other universities in the 'College and Department Adjustment of Chinese University' program. Then, in the 'Great proletarian Cultural Revolution' the campus stopped for its normal teaching, as required by the government. In the year of 1968, under the President Mao's Police of 'July 21st Directive' (7.21 指示), the Nanyuan campus and Lingshui Campus were changed into 'big factories' to train the 'special students'[157].

After this special period of China, the university gradually changed to a normal one, but it was also organized by the Chinese government. Although it has more decision-making power than before, the university was based on requirements of the national need. In a sense, the research deemed that the orientation of the university is chose by the country.

5.2.2 Analysis the Transition Progress of Buildings Located in the Nanyuan Campus

5.2.2.1 Build-out and Demolition of Buildings

During the Period from 1946 to 2000, the construction work was not stopped. There were some new buildings constructed, but not like the in situation before 1945, the construction progress was not continuously, it only happened for several years. The details are shown in the Table 5-4 and the Figure 5-10.

Table 5-4 The Evolution of the Nanyuan Campus after 1945[158]

Date	Important information	Floor area (m^2)	Remarks
1940s	The bathhouse and the build-out of the Machinery Experiment Factory (機械実験工場),	About 503+436	
1951	The build-out of the Cafeteria of Main building group.	About 332.00	
1976	Temporary building of chemical industrial equipment factory (化工机械厂).	About 170.94	Temporary building
1979	The building of the chemical industrial equipment factory. (化工机械厂)	About 2130.00	
1982/83	The new boiler room. Was constructed in 1982, then build-out in 1983	About 795.44	Temporary building
1987	The warehouse, it was the original woodworking house of the chemical industrial equipment factory.	About 240.00	Temporary building
1987	A laboratory	About 38.27	Temporary building
1987	The chemical experiment building (化工实验楼)	About 900.00	
1980s	The garage and the 129st. residence	About 841．20	The
1990	The reconstruction of bathhouse	About 460.00	The old one was demolished in 1989
1991	The transformer house	About 89.00	Temporary building
1992～∽	Other Temporary buildings	——	

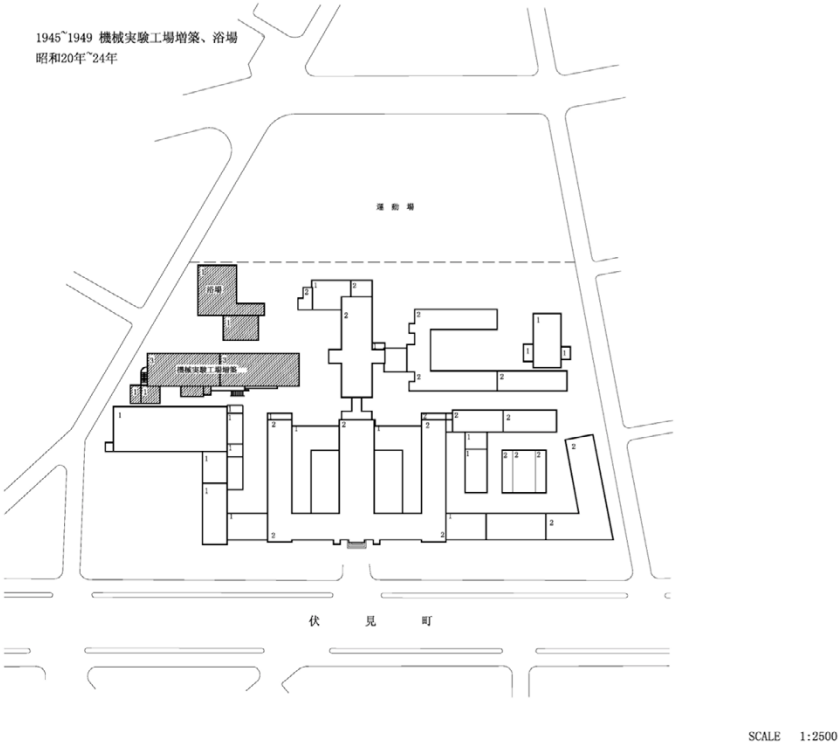
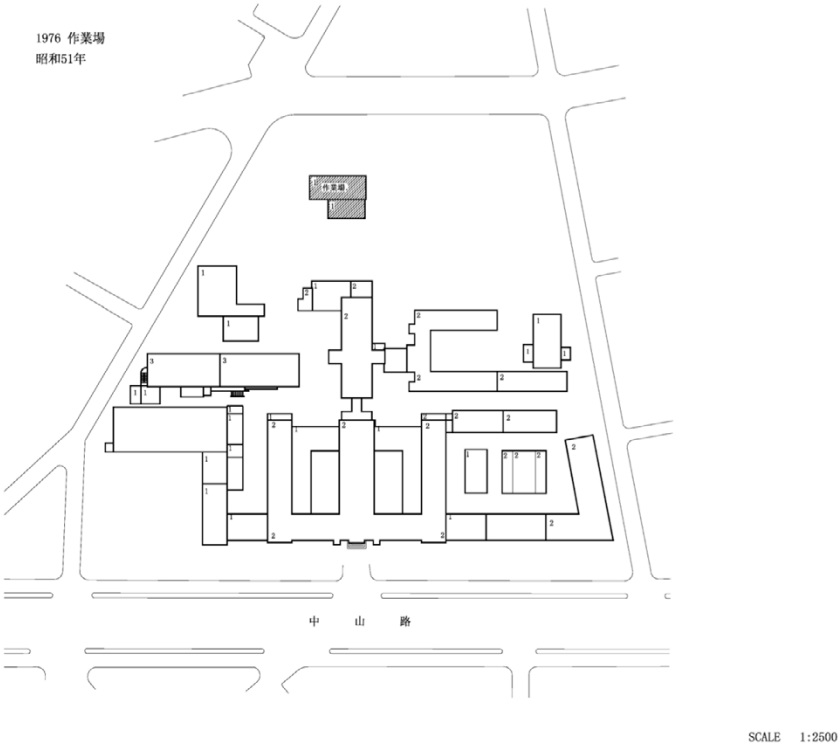


Figure 5-10-1 Retraced Campus Site plans of Nanyuan Campus after 1945



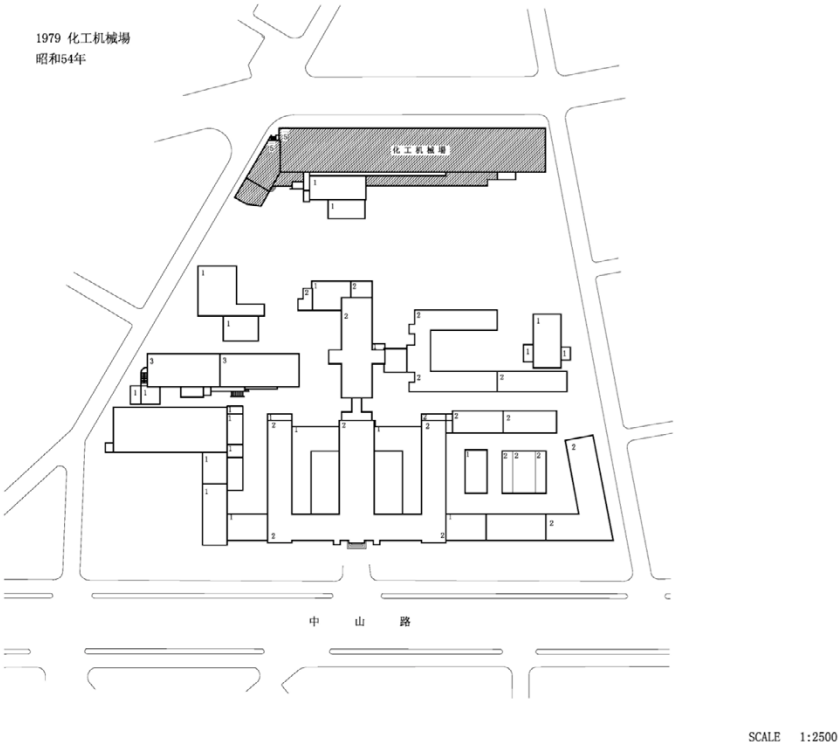
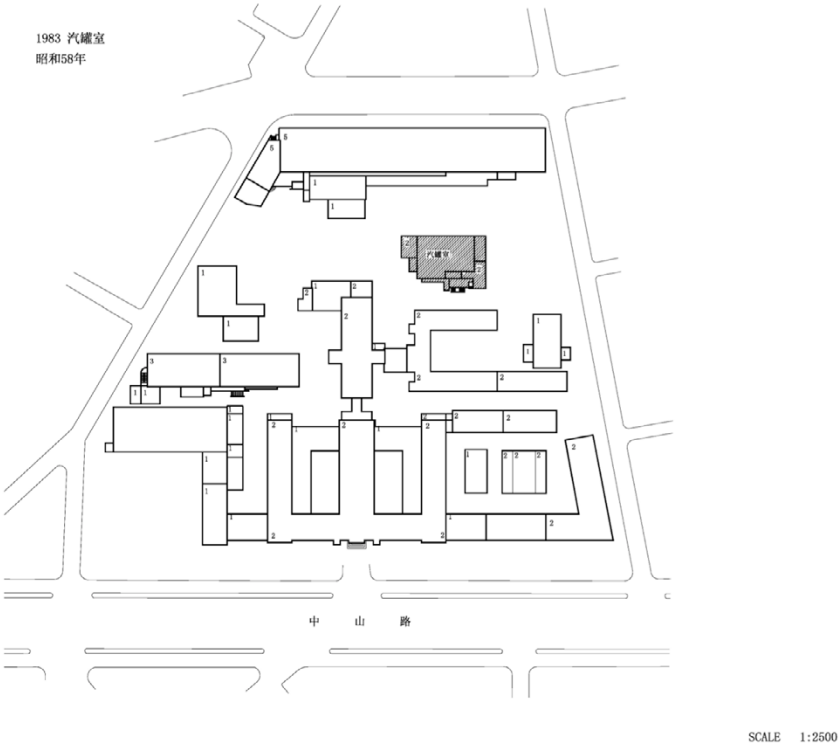


Figure 5-10-2 Retraced Campus Site plans of Nanyuan Campus after 1945



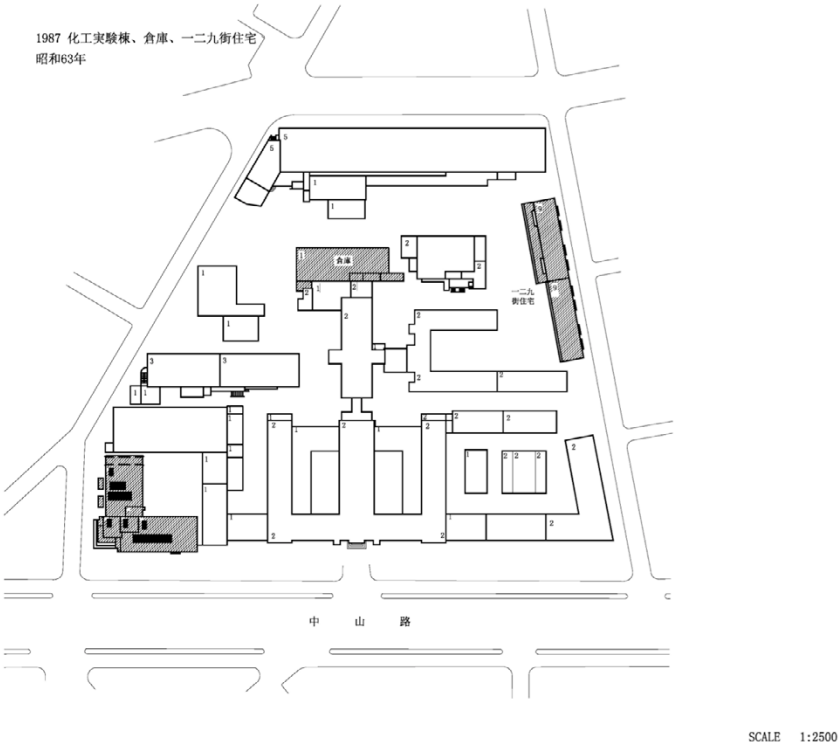
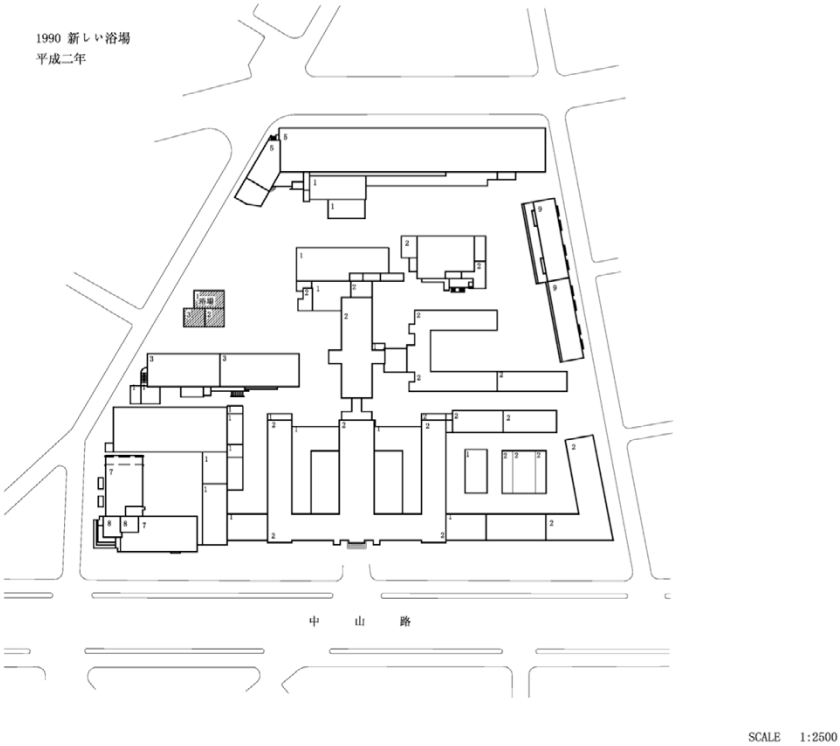


Figure 5-10-3 Retraced Campus Site plans of Nanyuan Campus after 1945



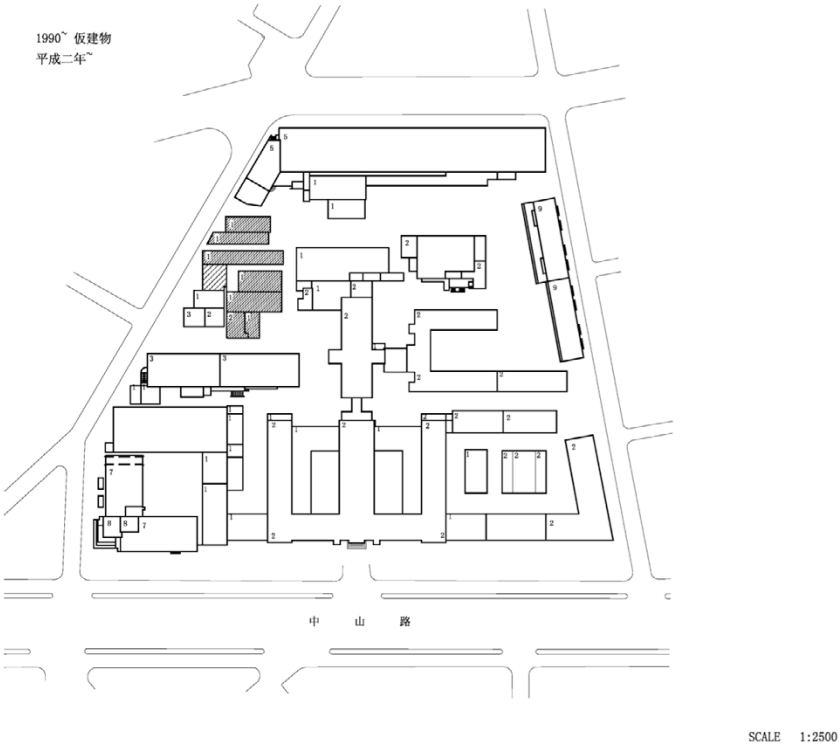


Figure 5-10-4 Retraced Campus Site plans of Nanyuan Campus after 1945

For the evolution of the Nanyuan campus after 1945, it can be classified into three distinct phases.

The first phase is 1946 till 1976 when the campus was reused by the Chinese government. During this period, the campus ownership was changed many times, but there was only little construction work finished,

The second phase is 1976 till the 1990s, when the Dalian Chemical Engineering School was merged to the Instituted in 1972 and it had been decided to use the campus for a long time in 1980. This is a build-out period of the campus. Almost all of the buildings that were established after 1945 were constructed in this period.

The third phase is 1990s until to now when there is no land which can be used for new construction works in the Nanyuan campus. In addition, caused by the chemical school and other users of the Downtown campus were moved to the Xibu new campus in 2010. There were no new permanent buildings constructed during this period.

5.2.2.2 Definition the Architectural and Planning Style Based its Form

The obviously difference of the architectural styles, between the period before 1945 and the period after 1945 is the external color of the buildings. The buildings' color before 1945 is the brick-red due to the constructional material and the Japanese Colonial Architecture Style. In the contract, the buildings' color after 1945, mainly during 1976 till 1990 is cement-gray, due to its modernism style and the effect by the Soviet-pattern. Except the chemical industrial building used the concrete as the constructional material, the others used the red brick as the main construction material.

The details of the architectural style can be concluded though these three buildings: the chemical industrial equipment factory in 1979 (Figure 5-11), the chemical experiment building in 1987 (Figure 5-12) and the garage and the 129st. residence in 1980s (Figure 5-13). They are important and permanent buildings, which were established in the Nanyuan campus after 1945. It can be easily seen, that all of them are built in the Modernism style, although they used difference constructional materials and difference structural style.

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

Figure 5-12 Photo of the Chemical Experiment Building

Figure 5-13 Photo of the 129st. Residence

The earliest one in the three, the building of the chemical industrial equipment factory looks like a typical and common modernism factory building constructed everywhere in China after 1945. It has no special characteristics and no decorations, in order to pursuer the lowest cost of construction. Inevitably, the Brick Masonry Structure was chose as the building structure for its lowest price. In addition, the function of the factory did not need the large rooms for its production. It means the Brick Masonry Structure was the best choice to the building. Only used as the factory for a short time, it changed to a mixed functional building like now and rented by some restaurants, markets and other shops shown as the Figure 5-14. It lost the original façade due to the reuse and renovations by these merchants.

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

The garage and the 129st. residence building is also constructed by the Brick Masonry Structure with 6 floors. The first floor is used for the garage and the second to sixth floors is used for the teaching and administrative staffs' apartment. The west and north façades of it simulate the original buildings (before 1945) architecture style with elements of brick-red color and a double-pitch roof. The east façade has a typical and common character of the Chinese 1980s residential building style that was very popular in that period, as it had been used as the standard residence style and forced to use by every designing institute of China. According to that, the yellow-gray masonry mortar and flat wall with the brick-red balconies is an observable characteristic of this style.

The chemical experiment building used the R.C. Frame Structure with 8 floors. It is the highest building in the Nanyuan campus. Obviously, this building's architectural style follows 'Le Corbusier's Five Points of Architecture'[159]. Especially, the point 'The horizontal window' is the typical characteristic of the

building. In addition, it belongs to the Chicago School of Architecture(シカゴ派) that is one famous aspect of the modern architecture, although the building construction system is not the steel-frame, due to it accord with the principle 'Form follows Function'[160]. Actually, the style of this building was very popular in China during the 1970s and the 1990s, these buildings can be found in every city of China.

All in all, the architecture style of the buildings in the Nanyuan campus, which were that constructed in the Nanyuan campus belong to the modern architecture. There is little connection between the two periods buildings: the ones before 1945 and the ones after 1945. The research suggested that the designer, who overlooked the architectural context of the Nanyuan campus in the build-out progress of it, made uncoordinated forms exist at the same place. But for that reason, it also made the campus not only owns Japanese modern building's characteristics but also the Chinese modern building's characteristics.

For the planning style of the campus, contracted with different period building's location (Figure 5-15) it is easily found that the buildings that constructed before 1945 were mainly located in the center of campus and made the campus boundary open to the city, but the building that constructed after 1945 were mainly located along the boundary and made the campus more closed than before. This phenomenon was concluded as the 'Selvage style (镶边式)' by Chen Xiaotian (2008), it is a outcome that affect by the Soviet Pattern[161]. This is the most obvious planning feature of the Nanyuan campus after 1945.

As a summary of this section, the whole evolution progress is summarized in the following Table 5-5.

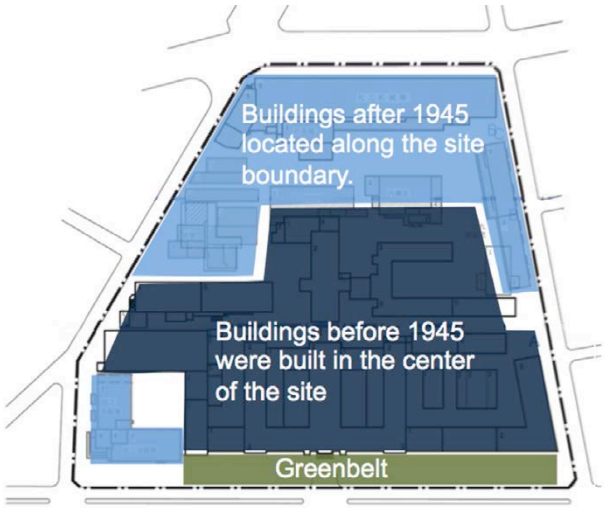
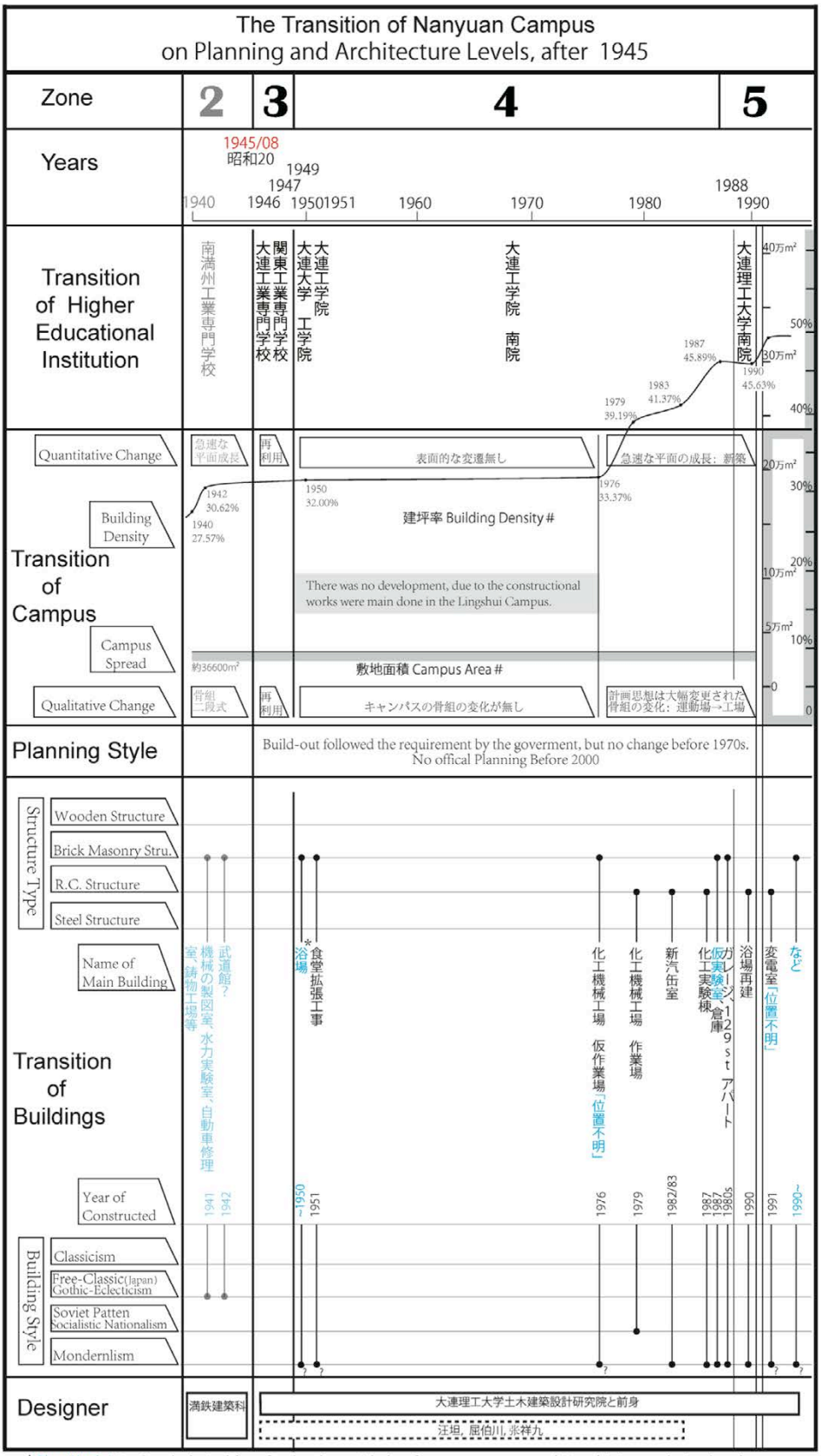


Figure 5-15 The Distinction of the Planning Methodologies, shown by the Building's Location, before 1945 and after 1945

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



* Blue Words: Not directly derived from first-hand materials,therefor accuracy not ensured. But ,this is a conclusion based on the study of first-hand materials.

\# Date calculated based on records in the mapping maps of the Downtown campus in 1950s and 2000s.

5.2.3 Spatial Analysis: the Transition Progress of Campus Morphology

5.2.3.1 Analysis the Spatial Morphology on Unit Level

The analysis is same to the one before 1945 in the chapter 3. It is mainly to clarify the 'figure-ground relation' of each units of the Nanyuan campus. Similarly the units are identified as the 'Plus unit' and the 'Minus unit' two kinds, shown as the '+ unit' and '- unit'. The transformation of each unit of the Nanyuan campus in each year is shown in the Figure 5-16.

After the August 1945, when the South Manchuria Industrial School was closed, the campus was left unused for 1 year until the Dalian Industrial Academy reused it in 1946. Based on the analysis above, it can be found that the construction work only happened in the unit 2 in 1950s and in a small-scale. Only the program of build-out the machinery experiment factory (機械実験工場) and the work of build a new bathroom was finished in the Unit 2. In accord with the unit evolutional regular before 1945, the form of unit 2 changed to be more closed than before, as its form transformed to the minus '上' type. For other units, there was no change unit the year of 1979.

The largest transformation of the site plan of the Nanyuan campus appeared, because the building of the chemical industrial equipment factory was constructed in 1979, located at the original playground site. This change made a new unit 6 appears in the campus and it is the first time to disorder the Nanyuan campus' planning ideology. This unit is '一' type and it open to the urban surrounding: the Tangshan street (唐山街). In addition, the building is the largest one in the campus at that time. In the next 20 years, the out-of-sequence evolution continuously proceeded. Until the year 1990, the original unit 2, unit 3 and unit 6 were merged to the new unit 6, due to that new buildings were constructed in here and they obscured the original boundary of each unit. It also changed to the closed unit with the mixed form type, cause by the 'Selvage style (镶边式)' location of the buildings. Another change in this period appeared in the unit 3, shown as the chemical experiment building, which was constructed in the lowland. As a result, the form of unit 3 changed to the total close '口' type from the half- open 'L' type.

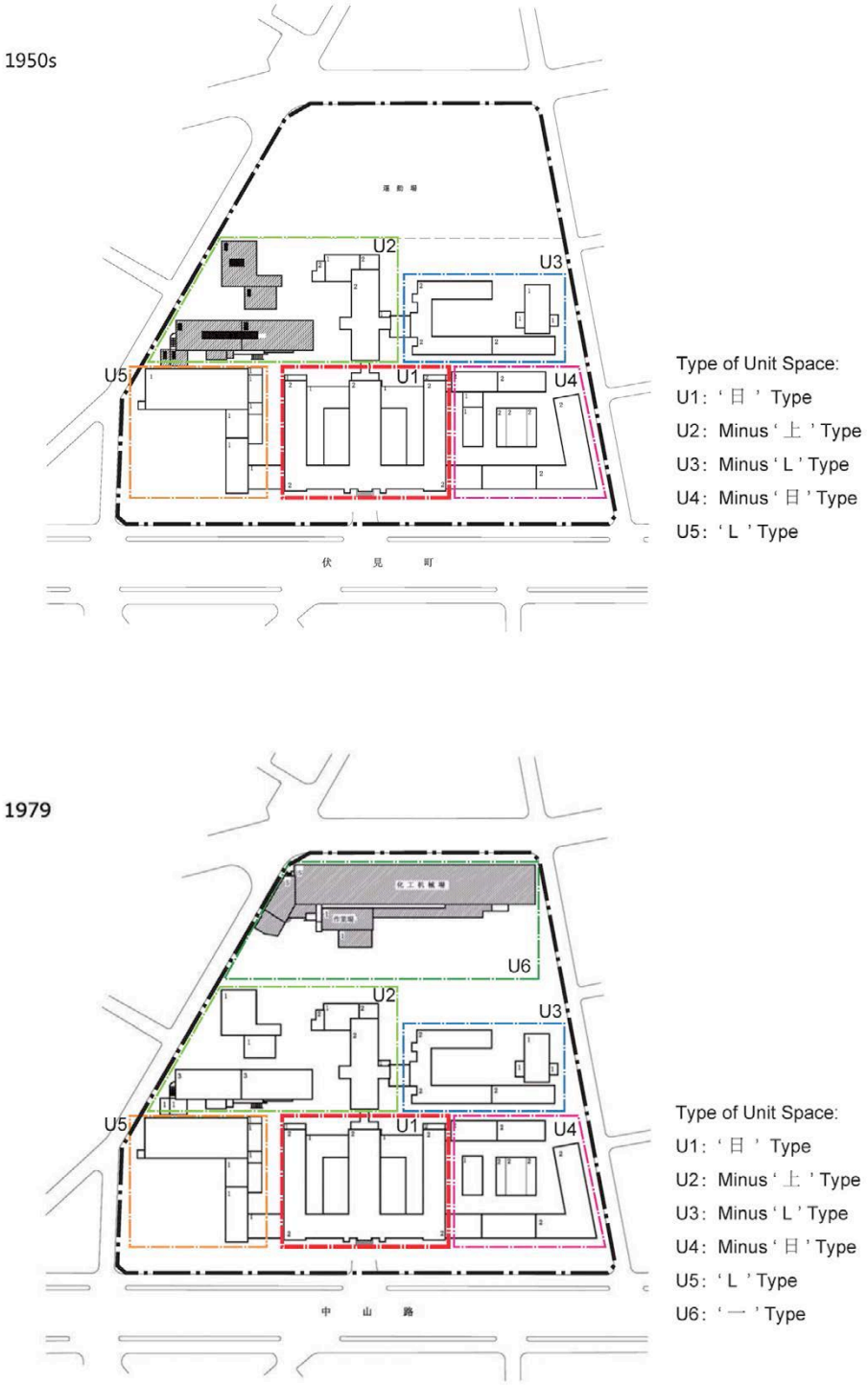


Figure 5-16-1 The Units Transition Progress of the Nanyuan Campus after 1945

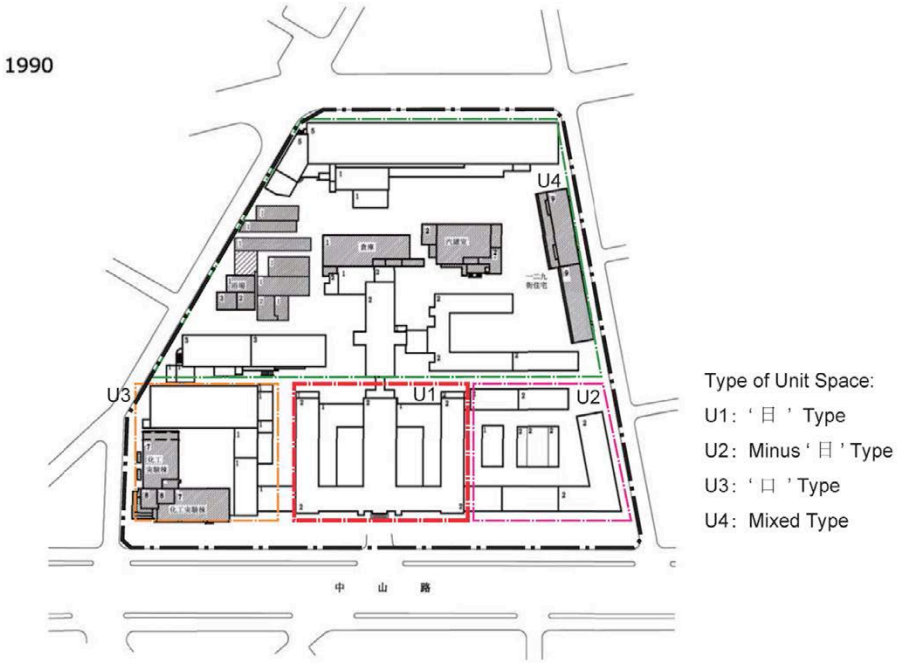


Figure 5-16-2 The Units Transition Progress of the Nanyuan Campus after 1945

After 1990, there is no large-scale constructional work proceeded any more unit now. Above all, the characteristics of the Nanyuan campus's evolution progress after 1945 has been illustrated in the Table 5-6. According to the analysis above, the summary is that:

a. The unit 1 is the main unit of the Nanyuan campus like it's before and also is the main entrance of the campus. Except the unchanged units 1 and 4, other units change a lot due to the build-out progress that lead to the campus site plan appear in disorder.

b. The original unit's form and property transform regular, from open to close, are also suitable for the units evolution progress after 1945. As a result, 4 totally enclosed units are appeared in the Nanyuan campus.

c. The function of each unit changed to multiple from the unitary. It led to the inconvenience and confusion of the use of the Nanyuan campus. Especial for many temporary buildings were established in the unit 6.

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

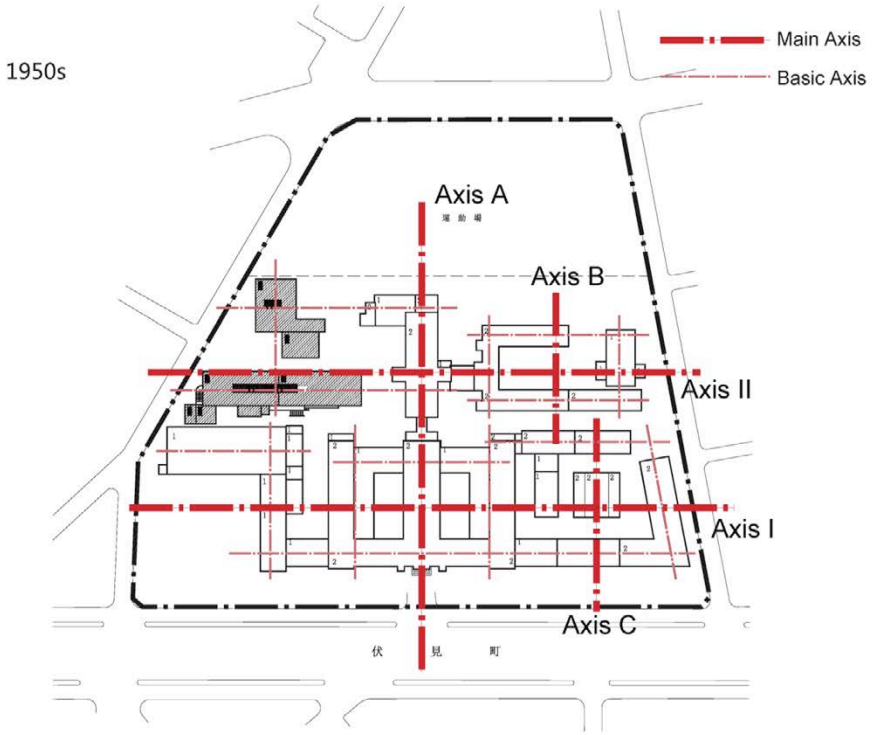
Characteristics of Nanyuan Unit and Space after1945												
	U1		U2		U3		U6		U4		U5	
	Type	Openness	Type	Openness	Type	Openness	Type	Openness	Type	Openness	Type	Openness
……	……	……	……	……	……	……			……	……	……	……
1950s	+ 日	5	+ 上	4	- L	5			- 日	5	+ L	3
1979	+ 日	5	+ 上	4	- L	5	+ 一	2	- 日	5	+ L	3
1990	+ 日	5	Mixed Type					5	- 日	5	+ 口	5
……	……	……	……					……	……	……	……	……
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											

5.2.3.2 Analysis the Spatial Morphology on Whole Level

Same as the analysis in the chapter 3, this analysis can be resolved by two parts: 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

The Figure 5-17 shows the analysis of the evolution progress of the campus axis system.



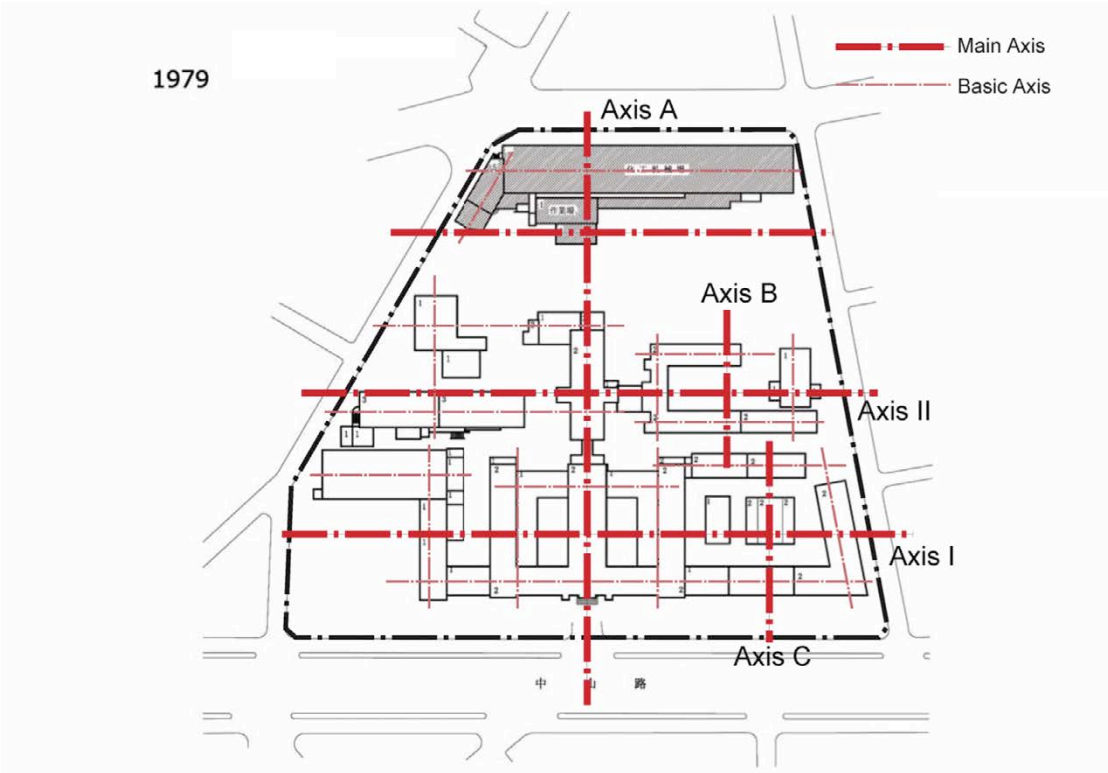
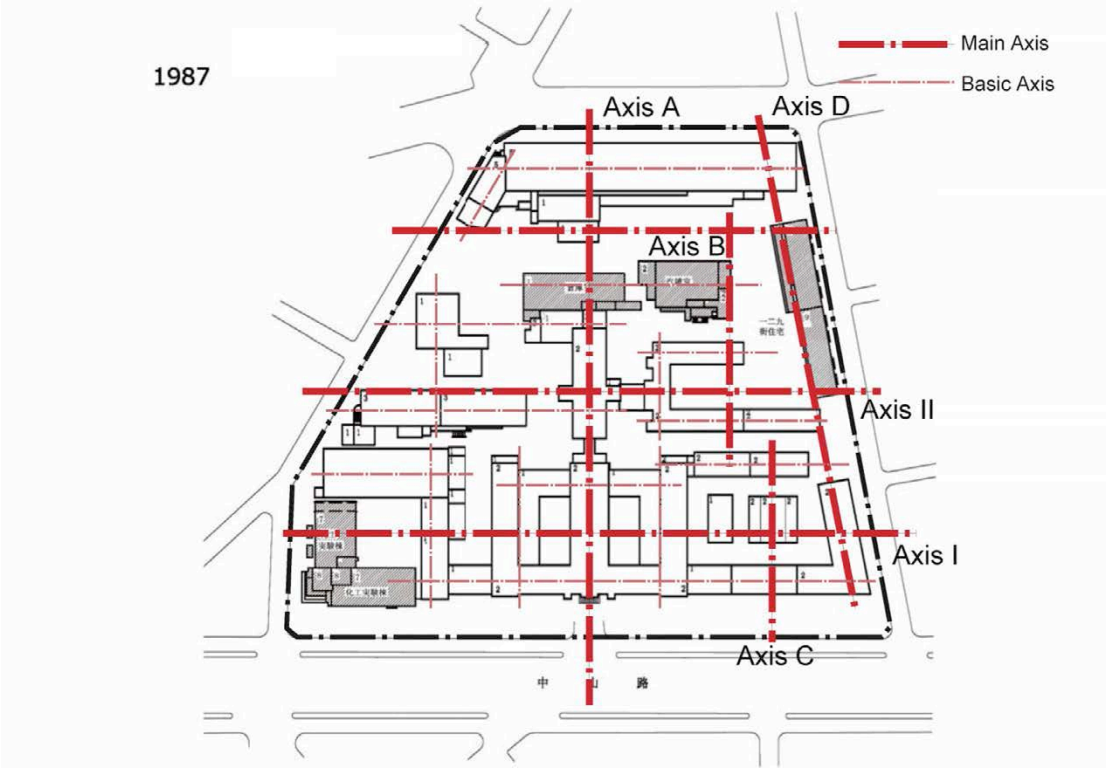


Figure 5-17-1 The Transition of The Campus Axis System after 1945



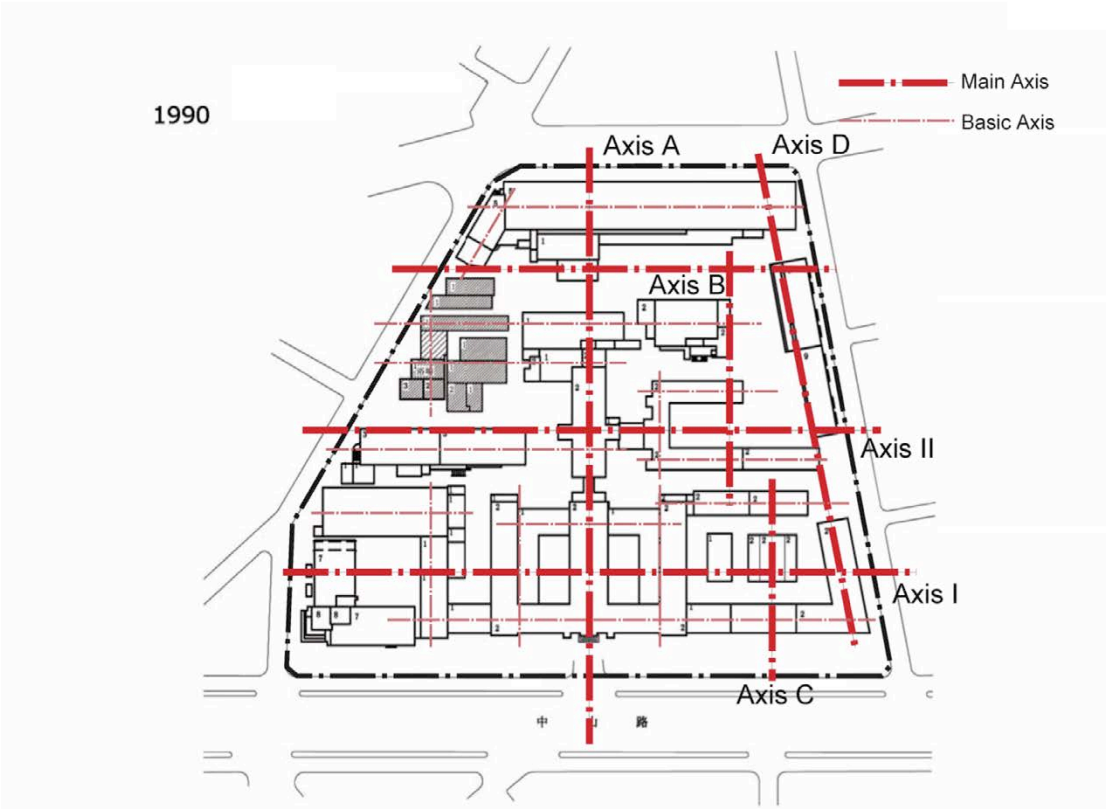


Figure 5-17-2 The Transition of The Campus Axis System after 1945

Obviously, there is no change in the first level axis in 1950s compared to the one in 1940, because, no larger build-out work was done in that period. But on the left side of the Axis II, a small changed appeared, due to the construction of a new bathroom around 1950. The sub-axes system shows much closer in this area than before, certainly it was under the charge of the axis II.

In the campus site plan of 1979, the axis III is marked by construction of the chemical industrial equipment factory building. Actually, the axis III always existed in the campus and charged the original playground. Just the construction of the building made the axis III much more visible than before. If the research deemed this axis was a virtual pattern before, after year of 1979, it changed to an entity of the campus. This transformation was the biggest one in the Nanyuan campus site plan evolutional progress. On the top side of the Axis III is the 3 floor building, it occupied a huge land for its construction, under the Axis III is land for transportation due to the opening of a new gate in the west side of campus.

But this transportation space did not exist for a long time, it was shrunk in the year of 1987 due to the construction of a warehouse and a new boiler room here. This two temporary building broke the order in the Nanyuan campus, but it balanced the two side of the Axis III. In addition, the site of the original Budo-jyo (武道場) reused for the garage and the 129st. residence. These buildings are located at the west side of the campus along a sub-axis that charged by Axis I and crossed Axis II and III. Another change is marked in the right side of Axis I, a new vertical main axis D is appeared in the site plan, as the new constructed chemical experiment building was enclosed the unit 5. Although in the site plan, the addition of the building is in harmonious with other building, the truth is it much higher than other buildings, which made it outstanding and antipathetic in the Nanyuan campus.

Later, around 1990, the reconstruction of the bathroom and other temporary building construction in the original unit 2 led to the new Axis E marked in the Nanyuan campus. At this point, a whole axis system appeared in the campus, it is a regulation and symmetric system in the campus site, although the outward appearance of the buildings does not shown harmony.

b. Analysis on the planning structure of the Nanyuan campus

Caused by reuse of the original buildings for the Chinese higher educational instate after 1946, the planning structure of Nanyuan campus did not changed so much in the beginning period around 1950s. The campus site was still divided by the buildings' function and the different zones were arranged in parallel relation with each other in the campus vertical direction (Axis A). The Figure 5-18 shows

the analysis of the evolution progress of the campus structure. Here, the only focus is on the site structure pattern and form. The campus was divided to 3-zones again. The range of zone A was almost same with the original zone 1. In the same the range of zone B was almost same with the original zone 2. The range of Zone C was same with the original zone 3.

According the historical record by Sun Maode (孙懋德，1989), it can be deemed that the original main building (本館) was still used as the teaching building in 1950s, but the original Bekkan (別館) changed to an ancillary facility building again, such as the cafeteria and student dormitory. And the original playground remained, but for economical reason, some part of the playground was used as the vegetable field and pigpen area. In addition, the new west gate was opened at the boundary of the site in the zone C. According to these facts, the campus structure is shown as the 1950s analysis graph, it similar with the one in 1933. The zone A is the teaching zone, the zone B is the ancillary facility zone and the zone is the sport zone.

In the next 30 years, no transformation happed until 1979, when the chemical industrial equipment factory was constructed on the playground. The main function of this building was not for the teaching use, but for the commercial production. Due to this, the function of the zone C changed to a practice zone in the campus and the structure composing of the Nanyuan campus totally changed.

In the year of 1987, other buildings were constructed continually at the boundary of the zone B and the zone C. In addition, the building of the chemical industrial equipment factory was reused as the commercial building around this year. The original zone B and the original zone C were merged to the new zone B, with mixed functions.

According the analysis above, it is obvious that the construction works after 1945 were mainly built in the south part of the campus and other boundary area. Moreover, the build-out works disordered the original clear and harmonious relationship of each building. But in the contract, it is easy to deduce that the plan of permanent buildings had been considered the original campus planning structure, because these buildings obeyed the original campus axes and the functional partition. Only for these, temporary ones gave a negative influence to the campus site, such as the bungalow (Figure 5-19) around the bathroom and the boiler room (Figure 5-20). In addition, one point that can be conformed is that there was no official campus plan finished during 1945~2002, although many buildings were constructed in the campus.

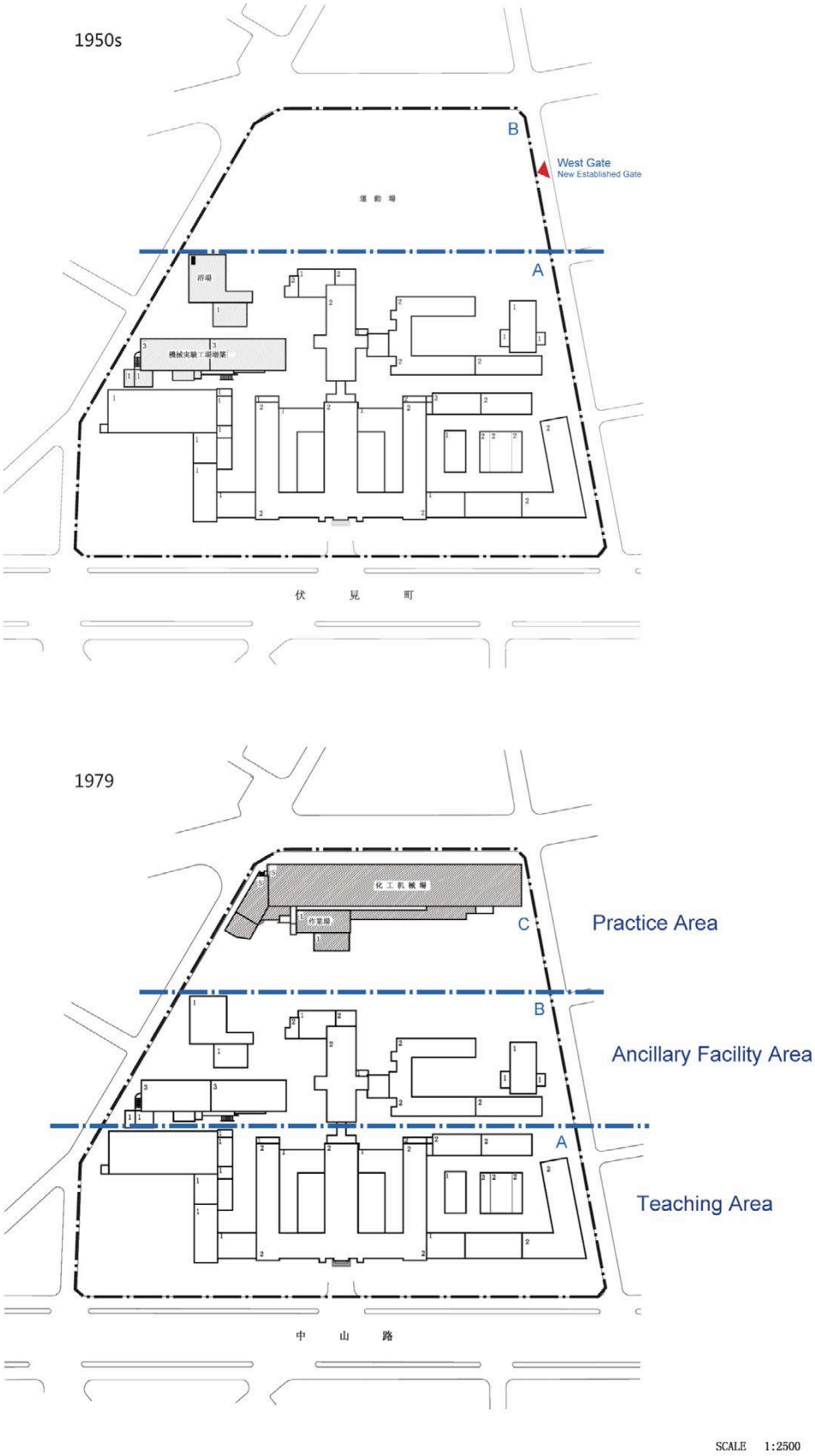


Figure 5-18-1 The Transition of The Campus Structure after 1945

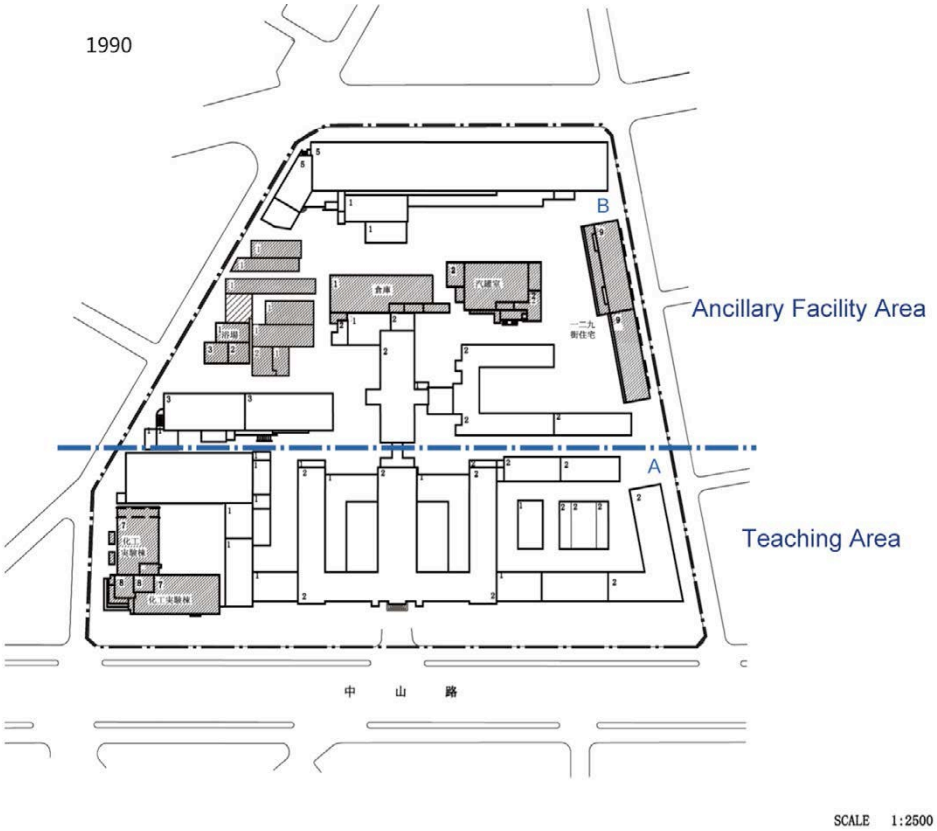


Figure 5-18-2 The Transition of The Campus Structure after 1945

Figure 5-19 The Temporary Buildings in Nanyuan Campus

Figure 5-20 The Boiler Room in Nanyuan Campus

5.2.3.3 Conclusion: The Spatial Features of the Socialism Campus, which was established on the Japanese Campus

The summary of the Nanyuan Campus characteristics and the evolution progress after 1945 is as follows:

The campus evolution was under the charge of the nation. The build-out progress was to meet the needs of political requirements, especially in the period between 1945 and 1980.

There is no main designer controlling the Nanyuan campus constructional work, the buildings construction just decided by the construction committee of the institute which led by the chairman of the institute.

All of the added buildings in the Nanyuan campus were designed by the institute's design organization.

'Modern Architecture' is the main style of the buildings which were constructed after 1945. Some elements of the original one (before 1945) have been studied and used, such as the brick-red colorful decoration in some parts of the building.

The original axis system and other planning features have remained in the campus evolution progress. Moreover, it has been developed to a complete morphology as each unit was changed to an enclosed one.

The permanent buildings location is usually along the site boundary, this planning was concluded as the 'Selvage style (镶边式)', which is a typical feature of the Soviet Pattern plan method.

After the build-out progress, the campus not only has the modern Japanese campus features, but also has the modern Chinese campus features.

5.3 Comparative Analysis the Similarities and Differences of the Evolution Progress between that Two Campuses of DUT after 1945

The research suggest that a comparative analysis should be done about the relationship between the Nanyuan campus (actually, the Downtown campus) and the Lingshui campus, although the Lingshui campus of DUT is not the key research objects of this dissertation and there has not given a elaboration for it. According the analysis research above, the similarities and differences of these to campus is shown as follows.

a. The campus planning philosophy is totally different. As a newly established one, there was no so much limit to control the planning work for the Lingshui campus, but for the Nanyuan campus, it was limited by the layout and style of the original buildings.

b. The color of the exterior façades has an obviously difference, although both of them belong to the Chinese modern architecture that affect by the Soviet-pattern. The color of all the main building[162] in the Lingshui campus is pure gray, as all of them are decorate by the exposed aggregate finish in the early period before 1990 (Figure 5-21). On the other hand, the buildings' color is partly gray with other decorative colors that under the influence of the Nanyuan Original buildings.

c. The evolution progress of the two campuses is different. The constructional work in the Lingshui campus is in continuously and relative equably from 1951 up to now, but for the Nanyuan campus, the constructionly only done intensively in the period from 1979 till 1990.

d. The design group of these two campuses were the same. The university self-owned design organization designed all the buildings in these two campuses. The organization firstly charged by Wang Tan & Qu Bochuan, then, it organized by Zhang Xiangjiu. And now, it developed to an independent company, namely the Design Institute of CML Engineering & Architecture of DUT.

f. The campus evolution was under the control of political and national elements in both periods. The difference is the sovereigns are totally different. Etc.

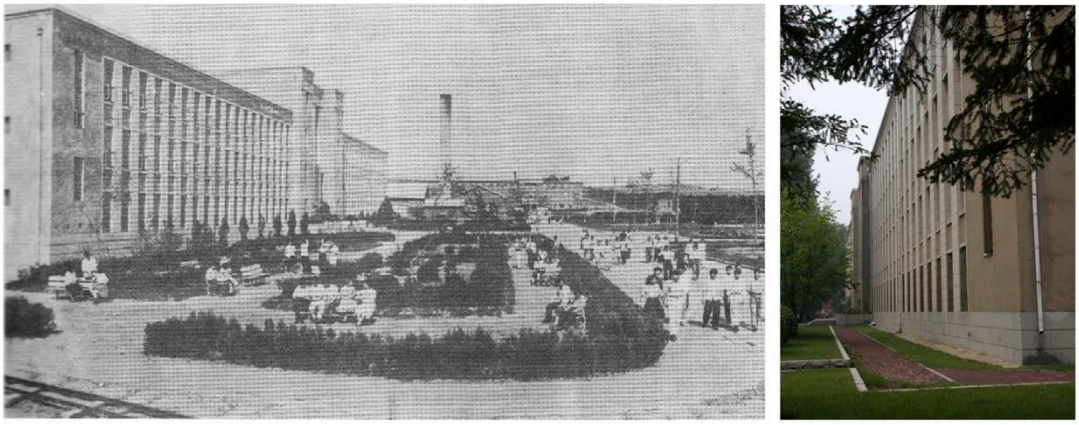


Figure 5-21 Photo of the No.1 Teaching Building of the Lingshui Campus , in 1956 and Present

5.4 Summary

After the reuse of the Nanyuan campus in 1946, the relative different evolution of the campus has been started. Just from that year, two different labels have labeled the Nanyuan campus, the Japanese higher educational institution campus and the Chinese university campus. But the first label was hidden by the government, due to some historical and political reasons. Caused by the new campus's construction, there are less and less citizens paying attention to the Downtown campus, when they talk about the Dalian University of Technology. Gradually, the historical facts of the Downtown campus, have faded from people's memory. Maybe it should be 'thanks' the urban renewal progress of Dalian city, the campus came back to the people's attention in the 2000s. A discussion that should protect this campus in the re-urbanization progress turns to a hot topic in Dalian city. Some voices support to demolish and reconstruct it, because it symbolizes the humiliation history of Dalian city. Some voices strongly urge the protection of this urban heritage, because it also carries the historical facts of Dalian. This research, prefers the latter, and suggested that this campus is one that not only recorded the Japanese colonial period's features, but also recorded the Chinese's modern campus evolutional process.

Although in the Chinese reused period, the gothic revival features did not appear again, the buildings that was constructed in this period has been merged into the campus site and changed to a part of the campus. There are also some interactive continuation has been found between this two period. Like the campus of the Tsinghua University[163] in Beijing, the Nanyuan campus also is a campus with the mix of characteristics of the times.

Chapter 6

Conclusion

6.1 Conclusion the Whole Evolution Progress of the Campuses on Architecture Viewpoint

6.1.1 Conclusion the Similarities and Differences of the Evolution Progress of the Campuses

a. For the evolutional progress of Nanyuan campus

The main subjects are to clarify the historical facts of Nanyuan campus and to identify its influence on Dalian's urban development. Included the evolution progress before 1945 when it belonged to the South Manchuria Industrial School (SMIS) and after 1945 when it belonged to the Dalian University of Technology. Therefore, the conclusions of this research are:

- Nanyuan is typical Japanese-Chinese mixed style campus with many significant characteristics of two differences periods, because it has been affected by the Japanese design philosophy and the 'Soviet-pattern' deeply.
- The architectural style of the campus building: for the ones before 1945 is the Japanese Colonial Architecture with the Gothic features, for the ones after 1945 is the Modern Architecture.
- The campus planning methodology: before 1945, the layout of the buildings located at the inside, center, of the campus; after 1945, the layout of it with the 'Selvage style (镶边式)'.
- 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 should be protect as the urban heritage, due to it was engraved with a number of historical facts, and therefore can be interpreted the whole history of the city through it.

b. For all the campuses in Manchuria region.

All in all, there are some characteristics of the higher educational institution's campus in Manchuria region, not only for the Nanyuan campus itself. Therefore, the conclusions of this research are:

- Higher educational campuses in Kwantung Leased Territory have typically common characteristics, such as the typical '日' plane form and the Zoning System Planning.
- The Neo-Renaissance style was the common design style of that time. In the Manchuria region it was transformed and developed to the Japanese Colonial Architecture style.
- Higher educational campus could be deemed as one of the main influencing factors for the urban development and one contributing factors for the set up of the education and research zone in its urban surrounding.
- All campus shared the same or consanguineous design groups with the Located City's urban planning.

6.1.2 For the Relationship between Urban Planning and Campus Site Selection: to Find Out the Root of 'Suburb-Located' University.

A typical characteristic of the campuses in Manchuria region is the campus as an important fact could encourage urbanization progress of their located urban surrounding. The research deeded that it was a breakthrough and experiment of the Japanese urban planning theory and practice, due to this urban planning method was widely used in Japan mainland after 1923, which is 10 years later than it was used in Manchuria region. And the campus, or as the university, has this function is general defined as **the 'Suburb-located' university** in many previous researches, such as the 'A History of the University in Europe: Volume 2' (H. De Ridder-Symoens, 1996). Definitely, this urban planning theory is not the Japanese planner's original one, according to the research survey, the research suggest that the campus of University of Oxford, as the second modern university established in all the world, is the first Modern campus for the 'Suburb-located' type. It is located in the Oxford town far away from the London, which changed to a modern and flourishing town gradually after the university was established in 1096. Then like it the campus of University of Cambridge was established and located in the Cambridge town also around but far away from the London city in 1209. These two universities are the typical cases in UK as the prototype of the 'Suburb-located' university. Then, many other modern universities were established in the Europe. The Figure 6-1 is shown the historical pedigree of the university in this type.

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

With the historical progress when American changed to colonies of many European counties, this university establishing method has spread to US after 1600s. Such as the campus of Harvard University in Cambridge of Boston in 1636, the campus of Yale University in the city of New Haven where far away from New York in 1701, the campus of Stanford University in the Stanford near the San Francisco and so on. The 'Suburb-located' University type is widely used in US for their urbanization progress until to now.

In the same way, the western missionaries who followed the colonists brought this University established philosophy to China after the 1st Opium war, not only from the European counties but also from US. In this way, almost all the universities which established by them were used the 'Suburb-located' type. Like the typical ones, Yanching University (燕京大学) and Tsinghua University (清华大学) were located in the suburb area of Peking for Chinese students. The first one established by the US & UK missions from 1898, and the last one established by the Chinese government with the US mission in 1909.

A litter later, three higher education institutions were established by the Japanese colonist in the Manchuria region for the Japanese students, The campus of RCE in 1909, the one of MMC in 1909 and the one of SMIS in 1912, all of them were located in the suburb area of the city. Difference with the cases in UK and US that usually located in a already existing but remote town or the existing but not in using facilities far away from the downtown area, the campus in Manchuria region were located in the totally new area away from the downtown area. It brought a series problem to its urban surrounding, due to these campus usually being the first building of the new planning city area. It has to be considered, if that the campus's function in the urban planning blue print was to encourage the urbanization progress or not. For the answer, a key person in the Japan history, Goto Shinpei (後藤新平) who was the first president of the SMR.Co, the counselor of the Kwantung Leased Territory government after 1908 and the mayor of the Tokyo in 1920-1923, the presider of the TEITOFUKKOIN (帝都復興院) after 1923 must be mentioned. It means after he went back to Japan, he played a very important role of the New Tokyo urban planning, known as the SHISAIFUKKOSAIKAIHATUJIGYO (震災復興再開発事業). And just in this period, the 'Suburb-located' University type was starting to be widely use in Japan and changed to a method for urban development in general, which was clarified by Kikate Junne (木方十根 2010). The most famous case is the Tokyo Institute of Technology (東京工業大学) and the Ookayama (大岡山) area development in 1923 (Figure 6-2). In addition, the case of Hitotsubashi Univetsity (一橋大学)

and the Kunitachi Daigakucho (国立大学町) of Tokyo in 1925 is typical examples of the university encouraged urbanization progress in Japan (Figure 6-3).

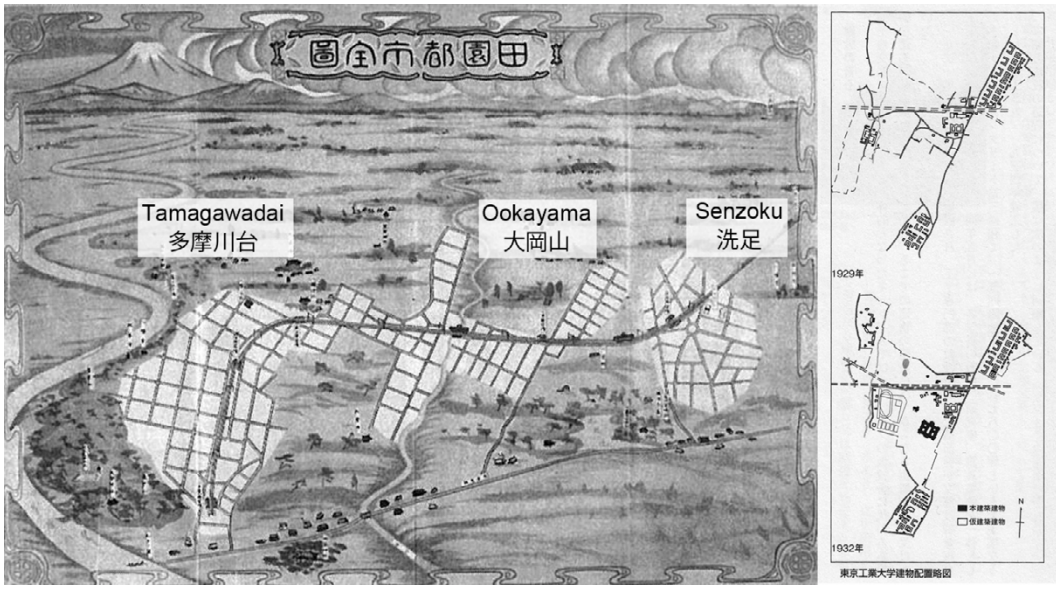


Figure 6-2 Campus of TIT and Its Surrounding Ookayama's Planning

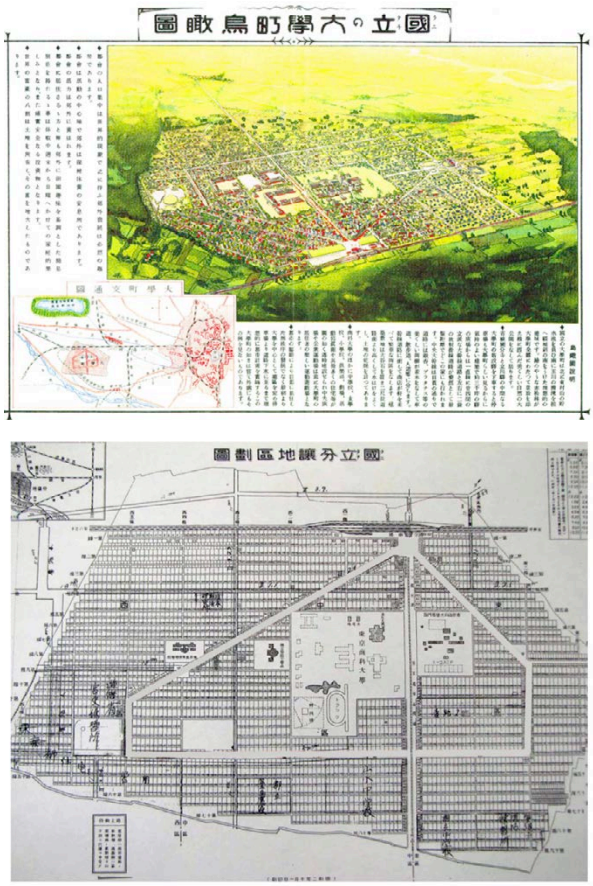


Figure 6-3 Planning of the Kunitachi Daigakucho

In a certain sense, the Manchuria region as the colony of the original Imperial Japan was an 'experimental field' of Japan, the colonist could do any 'experiments' that they could not finished in the mainland at that time, such as the Baroque urban form and so on[164]. Maybe from the inherent relation of the 'Suburb-located' University type from the graphic, it also can prove the truth of the hypothesis of 'experimental field'. And the difference of the practice in Japan mainland was the 'Suburb-located' University, or usually called as the Daigaku-Cho (大学町) in Japan, always with the railway projects and real estate development, which was an innovation and evolution of the 'Suburb-located' University planning method even changed to a kind of effective urban planning methodology.

6.1.3 Summary the Interaction Relationship of the Designers and Their Design Philosophy

According the analysis in chapter 4, one important point was known that the campus and their located urban surrounding was shared the same or consanguineous design groups, as known is the MANTETSU KENCHIKUKA (満鉄建築課) and the KANTO TOTOKUFU DOBOKUKA (関東都督府土木課). And in the section 4.4.1, the relationship of these designers was clarified. But why were they recognized as consanguineous relationship design groups? Were both of them important institutes in Manchurian region and belonged to the colonial organization? The truth is that almost all architects belonged to these two institutes were graduated from the same university and same department: the Architectural Discipline of the Tokyo Imperial University (東京帝国大学造家学専攻), especially for their initial stage. In addition, all of them were deeply affect by Tatsuno Kingo and Tsumaki Yorinaka at that time. The Figure 6-4 is showing the mentoring relationship of these designers.

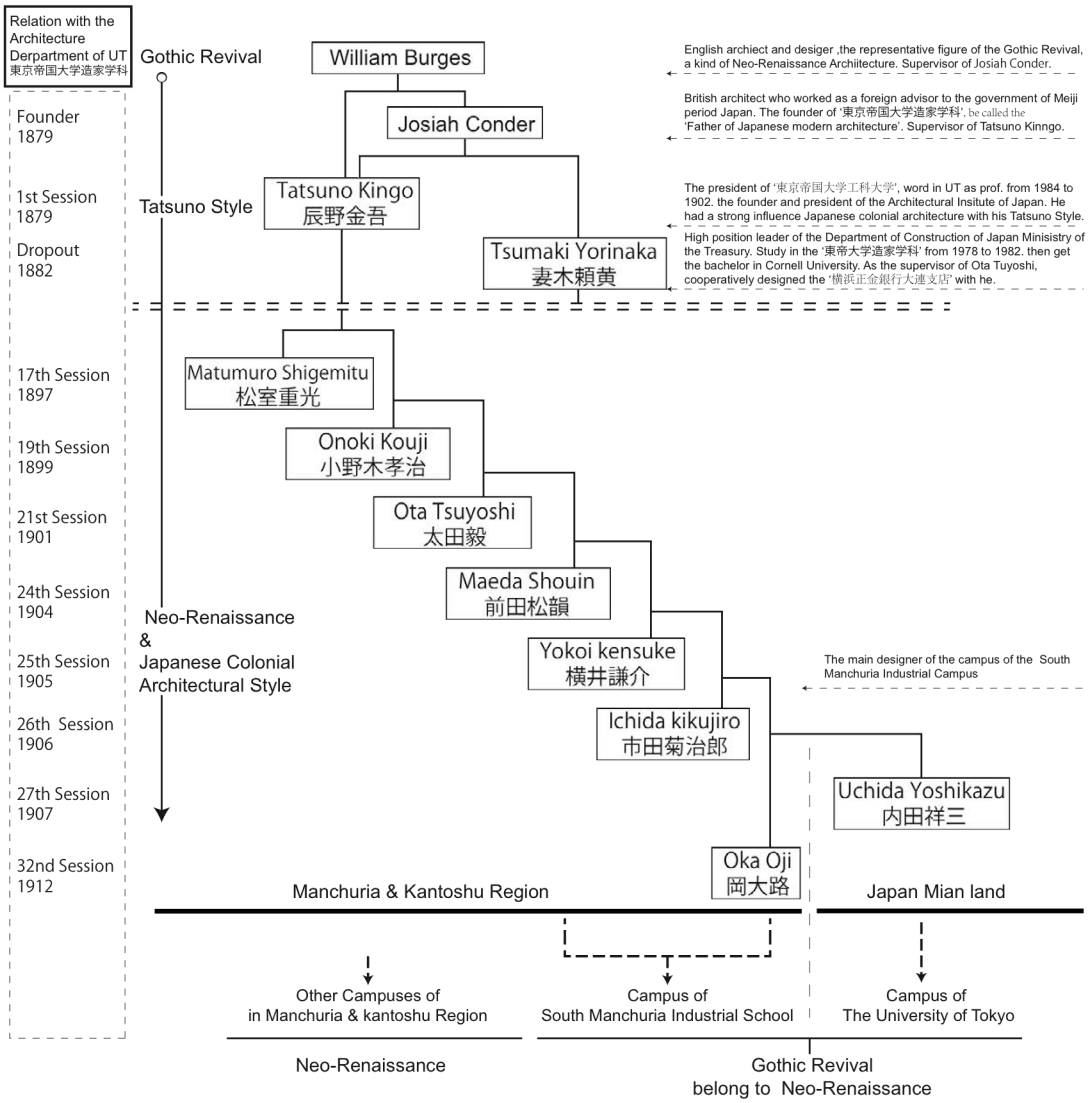


Figure 6-4 The Mentoring Relationship Flow Chart of the Campus & Urban Planners

It is obvious that Matumuro Shigemitsu (松室重光) and Maeda Shouin (前田松韻), were the main designers of the KANTO TOTOKUFU DOBOKUKA were the 17th session graduate and the 24th session graduate of the Tokyo Imperial University. Both of them were the designers of Ryojun University of Engineering and charged the urban planning of the Ryojun city and Dalian city. Onoki, Ota, Yokoi, Ichida and Oka were the graduates of 19th, 21st, 25th, 26th and 32nd sessions and all of them were the main designer of the MANTETSU KENCHIKUKA. The campuses of the SMIS and MMC, urban planning of Houten and partly Dalian were designed and planned by them. Hence, all of them had the similar architecture educational background. Especially, all of them were students of

Tatsuno or Tsumaki, as mentioned in the research, even for the works they did were under the assignment of these two peoples. Therefore, it can be said that these two design groups has the consanguineous relationship with each other.

And for the architecture style of them, there is an inherent relationship linking all of them. According to the result of the research, the works of these two design groups were mainly with the Neo-Renaissance style, such as the Gothic Revival , Romanesque Revival and Baroque Revival. The typical cases were the buildings around the Great Square of Dalian (大連大広場) and the buildings around the Houten Great Square (奉天大広場) showing in the Figure 6-5 and Figure 6-6. The supervisors of the designers were Tatsuno or Tsumaki, especially for Tatsuno, he was the president of the University as the professor of the Architecture Discipline and a founder & president of the Architectural Institute of Japan. Based on the western Architecture knowledge learned from his supervisor Josiah Conder and the study experience in abroad with William Burges and others, he developed his own Architectural Style: the Tatsuno Style (辰野式), which transformed from the Victorian Architecture, a series of architectural revival styles belonging to the Neo-Renaissance (Figure 6-7). But what the research want to emphasize is that the Josiah Conder was good at the Neo-Renaissance architectures, the Rokumeikan (鹿鳴館) in 1883, the No.1 Mitsubishi Office Building in 1894 and the Building of Department of Navy (Figure 6-8) in 1895 are his main works. Moreover, he was called 'the father of Japanese modern architecture', due to he was the founder of the Architectural Discipline of the Tokyo Imperial University (東京帝国大学造家学専攻). As for the reasons why he specialized in the Neo-Renaissance, but not the Neoclassical Architecture and the Industrialization that were much popular architectural style than it, the important reason is his supervisor was the famous Victorian art-architect William Burges, who was the representative figure of the Gothic Revival too. In his illustrious career, the Sanin Fin Barre's Cathedral in Cork in 1893 was the first major commission for him (Figure 6-9). It is easily found that an obviously architecture style inherent flow appeared shown in the analytical graphic: The mentoring relationship flow chart. One point of the Japanese Colonial Architectural style, it should be said that it was a transformation and development of the Neo-Renaissance by the Japanese architects. Therefor, it can explain why all of the three campuses are built in the same Neo-Renaissance style, and also why the Nanyuan campus and the Hongo campus of the University of Tokyo share the same Gothic Revival style, although it is usually called the 'Uchida-Gothic Style (内田ゴシック式)' in Japanese (Figure 6-10).

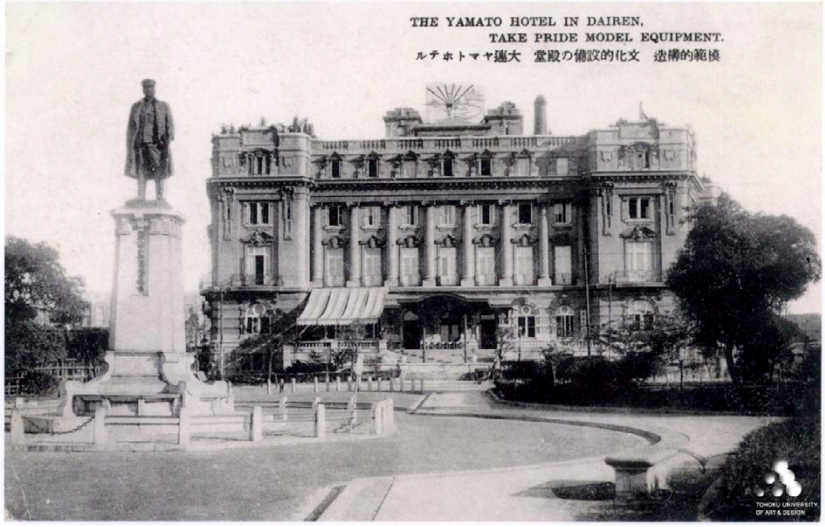


Figure 6-5 The Yamato Hotel and the Great Square of Dalian

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

Figure 6-7 The Tokyo Station,1920s

Figure 6-8 The Navy Ministry of Japan

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

Figure 6-10 The Yasuda Auditorium of UT

6.2 Comparative Analysis the Modern Chinese Campuses inside and outside of Manchuria Region

As mentioned in the chapter 1, there are amount of research has been finished about the Chinese typical modern university campuses, but no one research about the campuses established by Japanese colonist. According to the research conclusions about this dissertation, a comparative analysis of the Chinese modern university campuses is given here. The Figure 6-11 [165] illustrates some typical cases of the five-kind Chinese university. There are five kinds universities has been classified here, and their characteristics is shown in the Figure 6-12.

- Type I. Private ones established by missionaries coming form the western world that were followed with the aggressors. Shown in blue in the graphic.
- Type II. Private ones established by Chinese notabilities or oversea Chinese. Shown in purple in the graphic.
- Type III. Traditional-style public one (国立/公立中国伝統的な大学) established by Chinese government at all levels, not only the Central government but also the local government. Shown in green in the graphic.
- Type IV. Western-style public one (国立西式大学) established by government at high levels. Shown in black in the graphic.
- Type V. The ones established in Manchuria Region at that time by Japanese Colonist. Some of them were private ones; some of them were Japanese public ones. Shown in yellow in the graphic.

The universities belonging to the type I is a popular research topic in China, and they were also recognized as the powerful ones affected the evolution progress of the Chinese modern university. There are some unique features: Firstly, the campus planning based on an original Chinese traditional garden, in the same time, the 'Cross' sign are implied by the campus structure. Secondly, for the build in the campus, usually, the layout was as the 'U' type with a Western semi-enclosed plaza and the Eclecticism build with Chinese traditional big roof. Thirdly, there was an obvious axis charged at the Campus site planning. The campus of Yanching university (燕京大学) is the typical case for it. Similarly, the campus of Ginling Women's University (金陵女子大学), Nanking University (南京大学) and Canton Christain College (岭南学堂:中山大学) are belonging to this type. In addition, almost all of the campuses belonging to this type were designed

by Henry Killam Murphy, usually, the campus was located outside of the downtown area.

The campus of Xiamen University (厦门大学) is a typical case of the Type II. The campus located in the suburb of Xiamen city, at a peaceful, beautiful and wonderful scenic spot. Although the architecture style is the Eclecticism with the Chinese traditional big roof, there are no obvious axis changed in the campus structure, due to the natural topographic condition and other reasons. The campus of Fudan College(私立复旦大学), Private Nankai University (私立南开大学) and the original Houten Normal College(奉天师范学堂)[166] are belonging to this type.

The campus of the type III was a typical type to represent the Chinese owned university. The universities belonging to this type had a long history as the Chinese traditional higher education institutions before they transformed to the modern university around 1900. For example, Sanjiang Normal College (三江师范学堂), the predecessor of it was the Nanjing Guozijian or called Imperial Nanking University, which was founded in the first year of Yong'an reign in the year of 258. In 1902, it transformed to a western style university and took the Japanese modern university campus design experience as the reference for the campus construction. Whereas, It just leaned to few representations of the 'Japanese-pattern', the essence of its campus layout still belonged to the 'Chinese Academy Style (书院式)'. The unique features are: Firstly, the orderly building layout in the disorderly campus site. it can be regard as the combination of the 'Chinese Academy Style (书院式)' and the 'Japanese-Pattern'. Secondly, the form of main buildings of the campus leaned onto Japan, like the '口' style plane form. Thirdly, the campus site is usually located in one heritage of famous chinese academy and then enlarged or reconstruct. In addition, the campus is usually located in the center of the city. The campus of Shanxi Grand School and Sichuan Chinese and Western School belong to this type.

The type IV is a kind of university that was established by the central government under the influence of western education system in the period of the end of Qing dynasty. Their features are similar with the campus of Type III. Firstly, the orderly building layout in the disorderly campus site, means it still belongs to the 'Chinese Academy Style (书院式)'. Secondly, the campus site usually located in one heritage of mansion formerly belonging to high-level family, and subsequently enlargering it. Third, the university not owned one campus, usually have two or three. In addition, the location of the campus was usually in the central of the city. The campus of Tsinghua College (清华学堂),

Imperial Tientsin University (北洋西学学堂) and Liang Kwang Short Normal College (两广速成师范学堂) are belonging to this type.

The type V is the main research object of this dissertation, all of them established in the Japanese Colony in the northeast region of China. As a conclusion of the research, the unique characteristics of it are: Firstly, the Japanese Colonial Architectural Style buildings, with the '日' type plane form , red-brick and the Reo-Renaissance features. Secondly, the campus and its urban surrounding were shared the same design group in a unified design. Thirdly, these universities were mainly, or only, used of the Japanese who lived in China. In addition, the campus was located in the suburb of downtown area as an important influence factor to encourage the urbanization progress.

From the Figure 6-11, it is obviously that under the influence of the 1st Opium war and 2nd Opium war, the old China change to a semi-feudal and semi-colonial country, western style universities were established in China in the 1890s, not only established by the western colonists but also by the Chinese government. It was a direct result of 'the Hundred Day's reform (百日维新)'. Moreover, another typical feature is that around 1911, almost all modern universities in China upgraded themselves in that period, caused by 'the Xinhai Revolution (辛亥革命)'. In addition, affected by the 2nd Sino-Japanese war, almost all Chinese universities moved their campuses from the war zone to the line behind of the battle zone in the years of 1937 and 1938. Definitely, these three features only are the common characteristics only of the campuses belonging to Type I–IV, but not for the Type V. It just because, the campus belonging to type V located inside of the Japanese leased territory. These campus and their owner universities were totally charged by the Japanese colonists and followed the Japanese higher educational system, without any relationship with the original Chinese government, especially for the two campuses in the Kwantung Leased Territory. In addition, they were outside of the war region in the beginning period, by this way, the campuses could develop steading and follow their own way. It should be clearly explained that the universities belonging to the Type I-IV were charged by the Department of Education of the Chinese government that time, even if some of them has established by western colonists. Therefore, all of them composed the higher educational system of China by the time of the Movement of Regaining Educational Rights (收回教育权运动). But for the Type V, they were completely outside of the system and had the same position in the old Japanese higher educational system with the Japan mainland. It means, these universities were not the universities of China but

Japan in the strict sense, although they were established inside of China. That was why there were few Chinese students in these universities at that time. Hence, the ownership of campus is the most difference between the ones inside and outside of Manchuria region.

But after the year of 1945, all of them experienced the campus reused progress of the College and Department Adjustment of Chinese Universities under the influence of the 'Soviet-pattern' in 1950s.

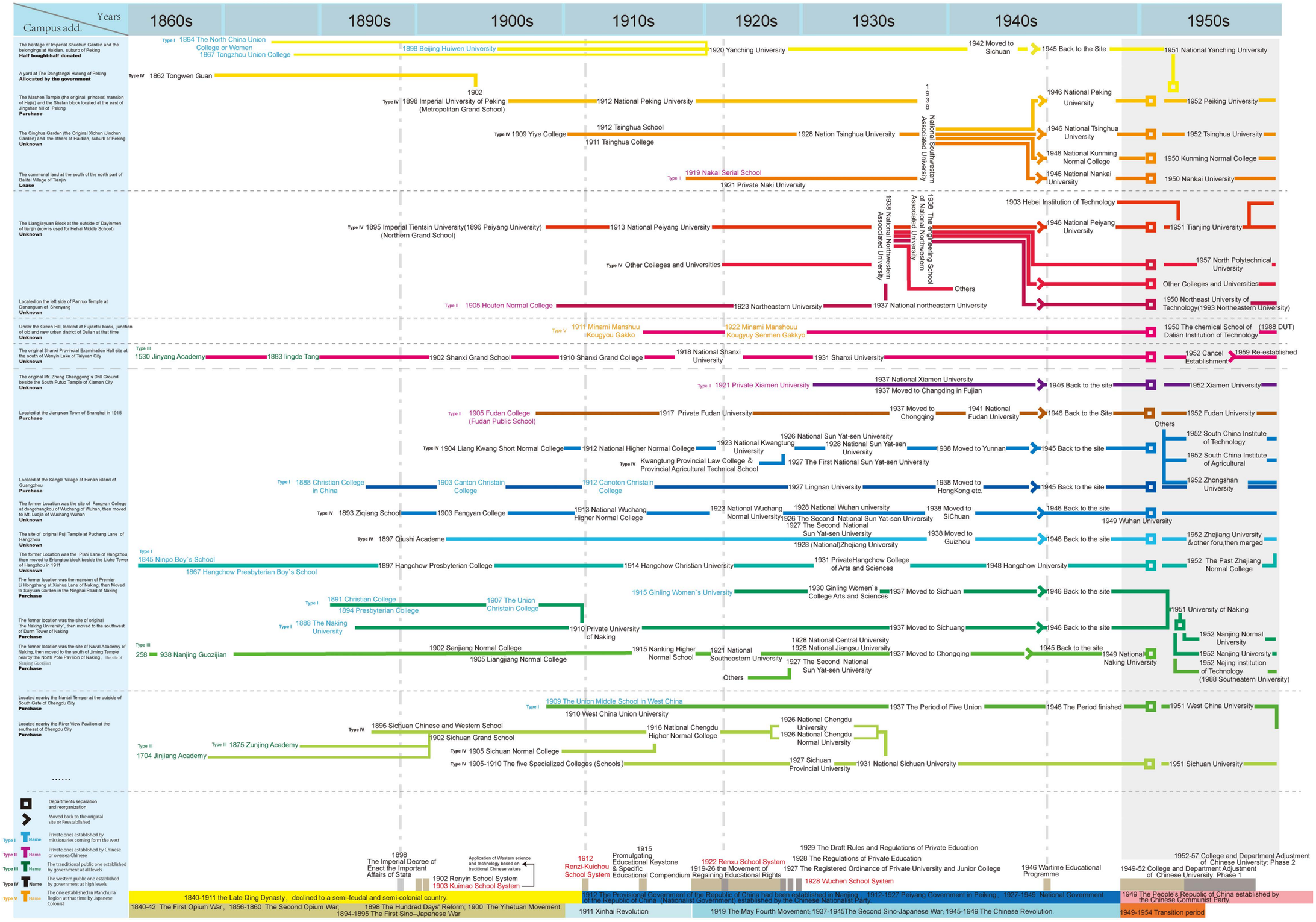
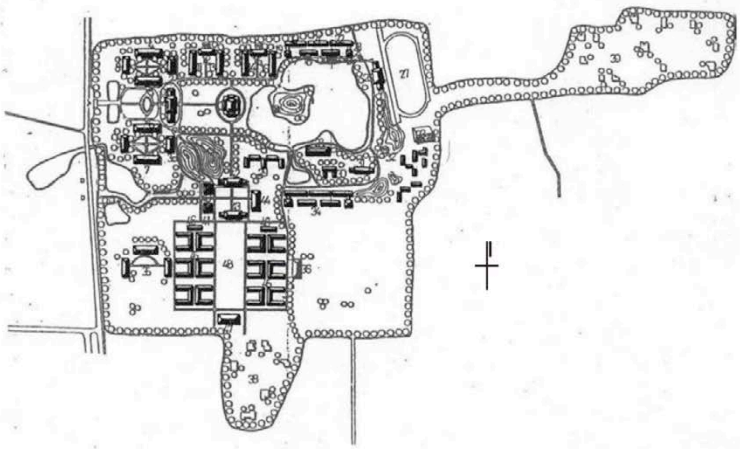


Figure 6-11 The Genogram of Chinese Modern Universities

Name

Private ones established by missionaries coming form the west

Past Name	Yanching University
Now Campus of	Beijing University
Type	I
Location	The heritage of Imperial Shuchun Garden and the belongings at Haidian, suburb of Peking
Year	1919-1926
Planer / Organizer	Henry Killam Murphy & Richard H.Dana,Jr.
Illustration Analysis	Good planning Based on Chinese traditional garden, Campus structure implied the shape of Cross.
	Located in the suburb of Imperial City, the site usually is peaceful, beautiful and wonderful scenic spot.
	Western semi-enclosed plaza Chinese Traditional Roof Obvious Aixs of Space
Relevant Thesises	1 The Illustrated History of Peking University (Book) 2 An American Transplant: The Rockefeller Foundation and Peking UnionMedical College (Book) 3 Study on Heritage Gardens in Peking University (Maste Dissertation) 4 Campus of Peking University (Journal Article) 5 Research on the Historical Evolution of the Campus Space form of Peking University (Journal Article) ……



Master Plan in 1920 (the second version)

Source: 唐克杨，从废园到燕园，生活·读书·新知三联书店，北京，2009.08

Similar ones

Ginling Women's University in Nanjing
The Nanking University in Nanjing
Canton Christain College in Guangzhou

Background

Yenching University (燕京大学) was a university in Beijing, China. It integrated three Christian colleges in the city in 1919. Yenching (燕京) is an alternative name of Beijing (Peking) derived from its status as capital of Yan state, one of the seven Warring States from 5th century BC to 3rd century BC.

The university was originally founded under the name Peking University. In its early years, it was in a chaotic situation, due to its financing by several churches:

•Huiwen University (滙文大學) was founded by the Methodist Episcopal Church (美以美會) in 1889. Its precursor (崇内懷理書院) was founded in 1870. Hiram Harrison Lowry was its principal.

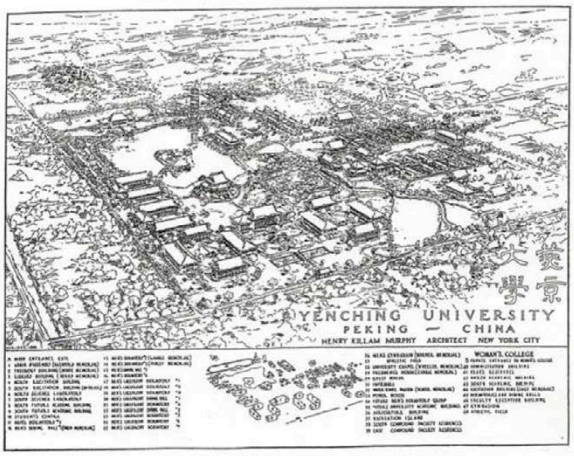
•North China Harmony Women's University (華北協和女子大學). Its precursor (貝滿女塾) was founded in 1864.

•Tongzhou Harmony University (通州協和大學). Its precursor (公理會潞河書院) was founded by the Congregational Church. Devello Z. Sheffield was the school's principal.

John Leighton Stuart was appointed as the principal of the university in January 1919 when he taught Greek language in Nanking Theological Seminary (金陵神學院), a seminary in Nanjing, China. Being short of capital at the beginning, he turned to fundraising worldwide and received support from the estate of Charles Martin Hall, an American executive of Alcoa Aluminum. He bought the royal gardens of a Qing dynasty prince to build a scenic campus and employed gardeners from the Imperial gardens. In that year, he invited Henry Killam Murphy (1877–1954), an American architect, to make the campus planning. With the continually changes of the planning in the next 4 years, the campus was completed in 1926. Theology, Law and Medical were the main schools in the university, with Arts and Science studies.

In 1928 the Harvard-Yenching Institute, was jointly founded by Yenching University and Harvard University for the teaching of the humanities and social sciences in East Asia and Southeast Asia. This independent institute continues to exist on the Harvard campus in Cambridge, Massachusetts. By 1930, the school was among the top universities in China, its teaching distinguished itself by a considerable academic freedom.

During the Second Sino-Japanese War in World War II, Peking was occupied by Japan and the university was moved to Chengdu in Sichuan. After the People's Republic of China was established in 1949, Yenching University with its Christian background was closed. Its arts and science faculties of Yenching were merged into Peking University, its engineering section was merged with Tsinghua University, and Peking University obtained the Yenching campus. In 1952 Peking University moved from central downtown Beijing to the previous Yenching campus in the city's Haidian district.



Master Plan 1920-1926 by Henry.k.Murphy

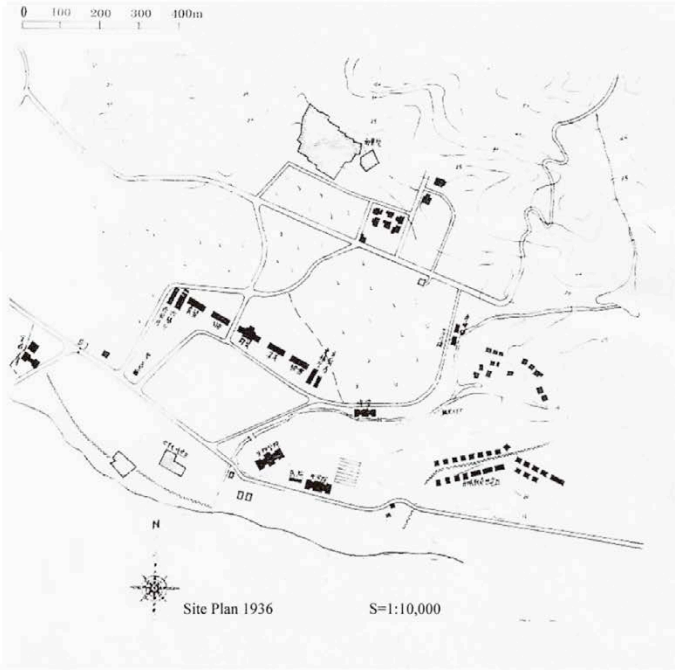
Figure 6-12-1 The Typical Case and Their Characteristics of Chinese Modern Universities

Name

Private ones established by Chinese or oversea Chinese

Past Name	Private Xiamen University
Now Campus of	Xiamen University
Location	The original Zheng Chenggong`s Drill Ground besidethe South Putuo Temple of Xiamen City
Year	1921
Planer / Organizer	Firstly Henry Killam Murphy then Tan Kah Kee and assistants
Illustration Analysis	Located in the suburb of Downtown, the site usually is peaceful, beautiful and wonderful scenic spot. Planning rule is 'one king and foru Follows'. Usually the planing of this type is more freedom than other types because of its character (owner). Eclecticism Eclectic Architecture= Chinese style Roof +Neoclassical Facade
Relevant Thesises	1 A Study On the Development of Open Space within the Campus of Modern Chinese Universities (Doctorate Dissertation) 2 The evolution of Chinese University Campus Morphology (Doctorate Dissertation) ……

Type Ⅱ



Source: Zhang Xuhong, A Study On the Development of Open Space within the Campus of Modern Chinese Universities, Doctorate Dissertation of the University of Tokyo,2004

Similar ones

Fudan College in Shanghai
Private Naki University in Tianjing
Houten Normal College in Shenyang

Background

Xiamen University (Latin: Universitas Amoiensis, Chinese: 厦门大学), colloquially known as Xia Da, located in Xiamen, Fujian province, is the first university in China founded by overseas Chinese. Established by Mr. Tan Kah Kee in 1921, the university was originally known as the University of Amoy.
In 1919 Mr. Tan Kah Kee (陳嘉庚; pinyin: Chen Jiageng), the well-known overseas Chinese leader, donated millions of dollars to establish and endow Xiamen University, officially founded in 1921. Xiamen University's main campus is located in Siming District, southwestern Xiamen. Located at the foot of the green mountains, facing the blue ocean and surrounded by Xiamen bay. It is regarded as one of the most prestigious and selective universities in China.
Mr. Tan handed over Xiamen University to the government in 1937 due to lack of funds, and the institution subsequently became a national university.
In 1938, at the outbreak of the Second Sino-Japanese War, the university temporary relocated to Changting in Min Xi (闽西) county, western Fujian.
At the end of World War II in 1946, Xiamen University moved back to Xiamen and resumed normal operations.
In 1952, Xiamen University became a comprehensive university, and has been designated as a national key university since 1962.

The Photo of Qunxian Building Group

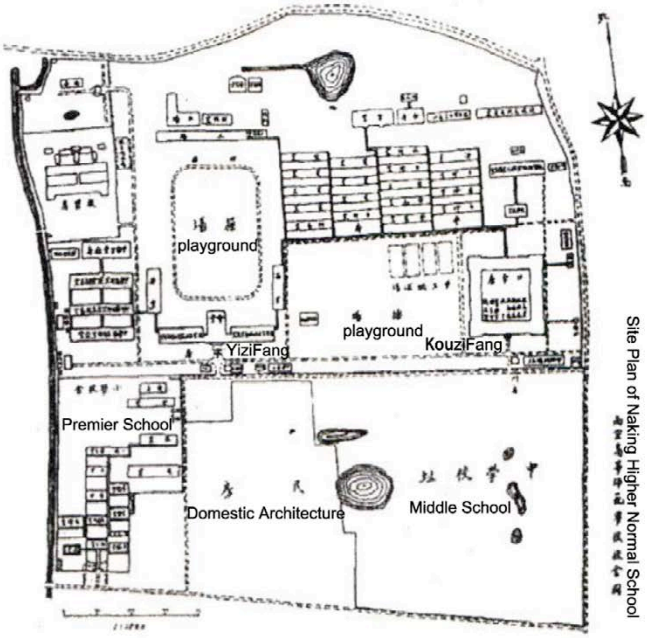
Source: Zhang Xuhong, A Study On the Development of Open Space within the Campus of Modern Chinese Universities, Doctorate Dissertation of the University of Tokyo,2004

Figure 6-12-2 The Typical Case and Their Characteristics of Chinese Modern Universities

T Name

The tranditional public one established by government at all levels

Past Name	Sanjiang Normal College (Naking higher Normal School)
Now Campus of	Southeastern University
Type	III
Location	The south of Jiming Temple nearby the North Pole Pavilion of Naking, the site of NJ Guozijian
Year	1902
Planer / Organizer	Hu Jun（胡钧）
Illustration Analysis	orderly Layout in disorderly Planning. Remain the character of chinese traditional academy（書院） The form for Buildings Learned from Japan(the University of Tokyo) at that time. The Site usually located in one heritage of famous Chinese academy, and then enlager it or reconstruct it
Relevant Thesises	1 The History of Najing University for the Past One Hundred Years (Book) 2 Preliminary Research on the Old Campus Outdoor Environment of the Nanjing Historical Famous University (Maste Dissertation) 3 Under the Influence of Americal University Model;Take National Southeast 4 University as a Example to Study on the Transformation of chinese Universities Bewteen 1915 and 1927 (Doctorate Dissertation) ……



Source: Zhang Xuhong, A Study On the Development of Open Space within the Campus of Modern Chinese Universities, Doctorate Dissertation of the University of Tokyo,2004

Similar ones

Shanxi GrandSchool in Taiyuan
Sichua Chinese and Western School in Chengdu

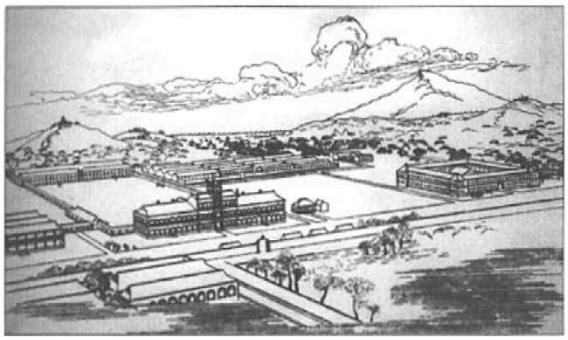
Background

Imperial Nanking University, the predecessor of Sanjiang Normal College, was founded in the first year of Yong'an reign (CE 258) under the Kingdom of Wu by Emperor Jing of Wu, and the first president was Wei Zhao (韋昭). In the first year of Jianwu reign (317), 155 new rooms were built in the campus which was located in today's Fuzimiao (夫子廟) area situated on Qinhuai River banks, and the Nanking Imperial University began recruiting students from common families instead of only from families of high-ranking officials. In 1381 the Imperial Central University (國子監, Guozijian) moved campus from Nanking Fuzimiao area to south of Qintian Mountain (欽天山), near Xuanwu Lake.

In 1902, Sanjiang Normal College under new educational system, using Japanese modern higher institutions of learning as references, was beginning to be established to replace the traditional Chinese school Nanking Academy, and was opened in the next year, with campus constructed south to Qintian Mountain. The name was changed to Liangjiang Normal College in 1906, and the new president Li Ruiqing (李瑞清) established the first faculty of modern art in China.

In 1915 after the Republic of China replaced Qing Dynasty, the Nanking Higher Normal School (南京高等師範學校) was founded to replace Liangjiang Higher Normal School which was closed three years before due to Xinhai Revolution, Jiang Qian (江謙) was appointed as the president. The school established the China's first faculty of modern gymnastics (physical education) in 1916.

In 1921 the National Southeastern University (國立東南大學) was founded, based on Nanking Higher Normal School .



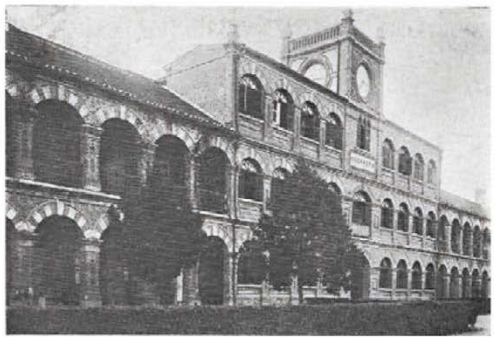


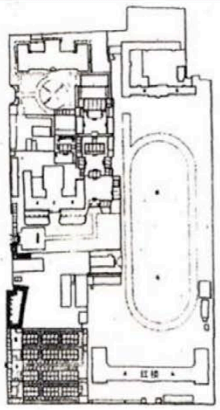
Figure 6-12-3 The Typical Case and Their Characteristics of Chinese Modern Universities

Name

The western public one established by government at high levels

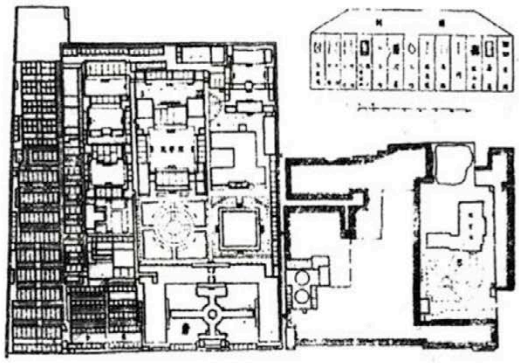
Past Name	Imperial University of Peking
Now Use for	Memorial Hall, etc.
Location	The site of princess' mansion of Hejia located at the east of Jingshan hill of Peking, etc.
Year	1862~
Planer / Organizer	No campus planer. Construction organized by the University Committee Leaded by President.
Illustration Analysis	orderly Layout in disorderly Planning. Remain the character of chinese traditional academy (書院) The Site usually located in some heritage of mansion belonging to high-level family, and then enlager it or reconstruct it Located in the center of Imperial City, the site have a close relationship with the seat of the central government, because itself is a offical departmen.
Relevant Thesises	1 The Illustrated History of Peking University (Book) 2 An American Transplant: The Rockefeller Foundation and Peking UnionMedical College (Book) 3 The evolution of Chinese University Campus Morphology (Doctorate Dissertation) ……

Type IV



Campus Ⅰ in Shantan Block ▶

Campus Ⅱ in Princess' mansion of Hejia ▼



Source: Chen Xiaotian, The evolution of Chinese University Campus Morphology, Doctorate Dissertation of the Tongji University,2008

Similar ones

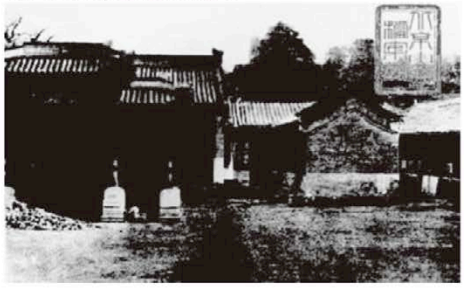
Yiye College in Beijing
Imperial Tientsing University in Tianjing
Liang Kwang Short Normal College in Guangzhou

Background

Mian Gate of Campus Ⅱ

Imperial University of Peking was founded in July 3, 1898 during the Hundred Days' Reform, used the Japan education system model, as a replacement of the ancient Guozijian (国子监).
In the first, the campus of Imperial University of Peking was originally located north of the Forbidden City in the center of Beijing, then extended its other campuses in the Beijing city. In 1902, the Faculty of Education was spun off to become today's Beijing Normal University, the best teacher's college in China. In 1912, following the Xinhai Revolution, the Imperial University was renamed "National Peking University" (国立北京大学). The famous scholar Cai Yuanpei was appointed president on January 4, 1917, and helped transform the university into the country's largest institution of higher learning, with 14 departments and an enrollment of more than 2,000 students. Cai, inspired by the German model of academic freedom, recruited an intellectually diverse faculty that included Hu Shih, Chen Duxiu, and Lu Xun. In 1919, students of Peking University formed the bulk of the protesters of the May Fourth Movement.

The Liberal In Campus Ⅱ,1899



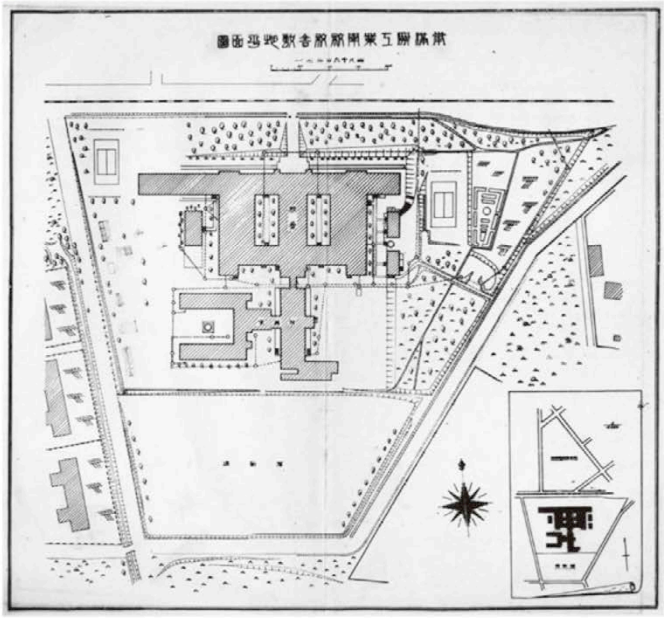
The Original sight of Campus Ⅱ

Figure 6-12-4 The Typical Case and Their Characteristics of Chinese Modern Universities

Name

The one established in Manchuria Region at that time by Japanese Colonist

Past Name	Minami Manshuu Kougyou Gakkou
Now Campus of	Dalian University of Technology,Chem.College
Type	V
Location	Dalian University of Technology Chem.College
Year	1911
Planer / Organizer	横井謙介
Illustration Analysis	Typical Japanese Style of that time: Closed courtyard, Pragmatic layout..... Design by Japanese Architect. Modfied Colonial Style Small but appropriate scale Only for Japanese lived in China Located in the suburb of downtown, the site usually is peaceful, beautiful and wonderful scenic spot.
Relevant Thesises	1 南滿洲工業學校創立十年誌 / [南滿洲工業學校編] 2 南滿洲工業專門學校創立30年誌 3 The history of Dalian Unniversity of Technology 1949-1989 (Book) 4 The history of Dalian Unniversity of Technology 1989-2009 （Book） 5 Chronicle of the Past 50 Years of Dalian University of Technology （Book） 6 Chronicle of the Past 60 Years of Insititution of Chemistry in DUT（Book） ……



Master Plan in 1911

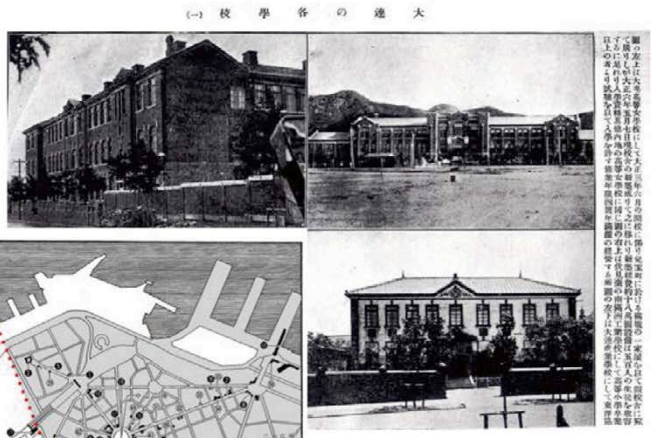
Source: 南滿州工業学校, 南滿州工業学校十年誌, 大連,1922

Similar ones

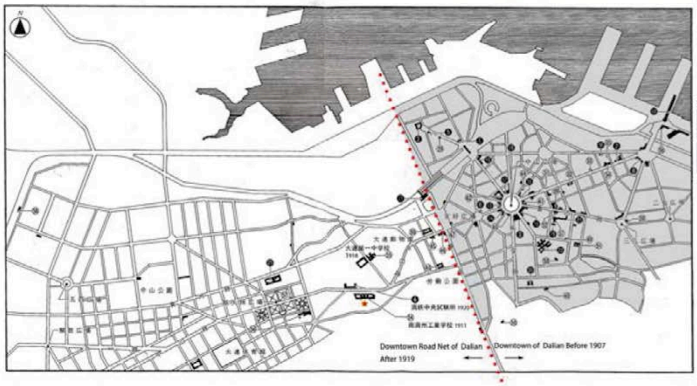
南滿州医学堂，1911
旅順工学堂，1909

Background

1911年3月：南滿洲工業学校設立
1922年4月：私立学校南滿洲工業專門学校として設立。
1946年11月：大連工業專門学校となる。
1949年4月：大連大学工学院化学系となる。
1950年7月：大連工学院化学系となる。
1988年：大連理工大学化工学院となる。



Source: 金澤求也，南滿州写真大観，滿洲日日新聞社 1911.02



Source: 藤森照信＆汪坦，全調査：東アジア近代の都市と建築，大成建設，1996.03

Figure 6-12-5 The Typical Case and Their Characteristics of Chinese Modern Universities

6.3 The Lessons and Enlightenment for the Research

As a research of the higher educational campus in the Kwantung Leased Territory, this dissertation belongs to a kind of historical details research. But from these details it can also enlighten nowadays designers and planners for their new design works.

The new building should follow the urban context of its surrounding is, usually is called the Regionalism. In 1912, Dalian City was just built-up its original downtown area. One of important urban context of the city is the Baroque style urban structure, a kind of 'fashion' elements in Asian countries which could demonstrate their colonist's majesty and status. The Nanyuan campus as an important urban infrastructure, which is located outside the downtown area as the 'pioneer' and 'bellwether' of the western development project chose the Neo-Renaissance as its Architecture style by coordinating it with the urban context. This combination was popular in the colonial areas, even in some modern western cities. In more than 30 years of evolution progress before 1945, the style dominated the build-out steadily, but after 1945, due to the influence of the nativism and nationalism in China, this western and Japanese mixed style was totally abandoned by the located government, even of the National one until the 1990s, when 'the Reform and Opening-up Policy' was published. Instead of that, the Chinese Modern Architecture which transformed and merged by the Soviet-pattern and Modernism style was popular in China for more than 50 years until the 1990s. For the Nanyuan campus, the build-out parts after 1945, created disorder at the campus form objectively, because these parts obeyed the Regionalism regulation. Especially, the 7-floors chemical experiment building was located beside the main building in the northeastern corner is the most disharmonic one in the campus.

According to the results of the dissertation, the main advice to the campus reconstruction or the restoration projects is to consider and take into full account the campus' historical background firstly and then renewal creates the design scheme comprehensively. Especially, for the Nanyuan campus as the typical case of the ones established in the Kwantung Leased Territory, which as a special type of the Chinese modern university, need attention. If any irretrievable mistakes happen in its future evolution progress, it will result in the loss of social-culture treasure. Definitely, this advice does not only suit for the Nanyuan campus itself, but also for any other urban heritage in them evolution progress.

Nowadays, China is in a great period of the re-urbanization progress, the modern campuses in the original Manchuria region as the urban heritage,

especial for the Nanyuan campus, face the choice of totally reconstructing, partly renewal or whole preservation in their future. Taking the last build-out progress after 1945 as the historical mirror, must be useful for this progress. Especially for the cities which have experienced many times of social revolution and cultural baptism, but also with short-history cities, like Dalian (大連) and Qingdao (青島), should protect these heritages. It can be particularly important theme because there are not many historic interests existing.

6.4 Summary

From 1914 until now, during this last 100 years, a big change appeared in the Nanyuan campus, also the Fushimi-dai zone changed to the 129st. block in today. Based on this, the whole transformation progress of the higher educational campus in Kwantung Leased Territory can be reflected. The transition has the injection of social value and social orientation, mainly by Nativism and Nationalism. Two centralized management but regimes, the Japan Imperial Government and the PRC Government, given and still giving it a deep affect to those campuses, limit and direct the development of them. For the same progress, it was also under the influence of invasion wars, social revolution and political turmoil. They brought about uncouthness loss to Chinese life and property. For the country it was like that, for the campus it has been the same as well, shown as the campus construction work break off, neglect, renew and mutate suddenly. Moreover, except from these social-cultural influence facts, the impact of advance theory and design trends also brought the change to the campus, for which the significant sign was the coexistence of planning with openness and closeness. It is about the buildings layout, the campus form and space. All in all, these campuses have been preserved until now, meaning until now they have not been abandoned by the epoch and they are the selected ones in the era. The question 'why have those buildings have been preserved until now?' is a topic worthy considering. For this research, which mainly focuses on the campuses evolutional progress on the architecture viewpoint, but for the evolution progress on the social-cultural insights, the research is not enough and will be needed in the future.

As the last part of the dissertation, the contribution of this research to the management the collection, collation and classification of original documents of higher educational campuses in Kwantung leased Territory is described, especially, the discovery of numerous design papers which were disclosed for the first time. Based on them, the campus planning papers and other evolutional details have been retraced year-by-year, and can be easily used for future studies.

The limitation of the research is many of the conclusions are the inference, which means that the accuracy cannot be ensured due that they could not be directly derived from the first-hand documents. This is caused by few documents that have been preserved after the 2nd Sino-Japanese War, the War of Liberation and the Great Proletarian Cultural Revolution. Due to the impact of Nationalism

and the animosity to the imperialist plunder almost all detailed documents on urban planning and campus construction had been burned down at that time. The few ones which were used in the dissertation are the ones were persevered in Japan, are extremely limited. Even more difficult is to pick up the objective ones and wipe out the subjective ones.

In addition, this dissertation is the first research which studied the campuses in Kwantung Leased Territory & Manchuria region and the first one studied on the interaction relationship between the campuses and their located urban surrounding. An appropriate research methodology is very important for the dissertation, but as no researcher had studied this object, means before this that there is no mature and verified methodology the dissertation can refer to. Therefore, the authors had given all of his hearted and strength to selected one dialectically. After more than half-year study on the relevant information and discussion with the supervisor, the methodology of the dissertation has been decided. There must be some deficiencies, as it has not been verified in any research before this one, but however, it was proved that this methodology is useful, as many conclusions could have been obtained by it.

For this reason, I hope this dissertation attracts attention for the further research in this field and to get more rigorous and significant achievements.