

CONTROL CITY SCALE AND PROTECT BACKGROUND ENVIRONMENT -----A TALK BEGINNING FROM THE SCHEME OF FORMULATING PROTECTION OF THE JINYANG ANCIENT CITY

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Ruins of the Jinyang ancient city wall are situated along Guchengying Village at the Jinyuan Town 15km to the southwest of Taiyuan City; it is the focal unit of national culture protection (Fig. 1). Over a period of 1500 years extending from 497 BC when it first appeared in historical books, and later to 979AD when it was destroyed by fire, it had been an important and strategic city in the north of China all in the political, economic and military operations, thus forming the great stage of ethnical blending of this country. Particularly in the period of Sui, Tang and Five-Dynasty, this characteristic was expressed in special significance. Therefore, it possesses both important historical as well as practical significance concerning investigation and study of ancient site of city wall at Jinyang; outlay and historical vicissitudes of Jinyang City; research of the ethnical blending in the north region of China; development and evolution of ancient cities in China, historical position of Jinyang City as well as development of Jinyang City and protection of the historic sites and cultural relics.

General Status of Site of Ancient Jinyang City Wall

The ancient City of Jinyang was first built at the end of the Spring and Autumn Period¹, later it was turned to be capital of Zhao State bearing the title of Taiyuan County² and Taiyuan State³; in the period of Dong (East) Wei and Bei (North) Qi State till Tang dynasty, it formed the most prosperous time of Jinyang City, when it was turned in succession to be the 'Chief Government Office' of East Wei

State⁴; 'Alternate Capital' of North Qi State; 'North Capital' of Tang Dynasty⁵. In the period of great prosperity, Jinyang City consisted of three parts including the Western, Central and Eastern parts, while inside the western city there were again an inner city composed of Daming City, Xin (New) City; and Cangcheng City. These multiple city circles constituted a complete city system.

In the year 979 A.D. after Zhao's Kingdom of Song had wiped out the North Han State, burnt and flooded the city of Jinyang with water⁶ so as to have all the infrastructures as well as all the articles used in culture and life buried under the earth. Thence after for a thousand of years while the key point of Taiyuan was shifting towards the north, its position in the whole state was also declining greatly, and at the original site of Jinyang ancient city only a county was set up. According to the historical record, except a small city with a circumference of seven li was set up at this place in early Ming Dynasty, no large-scale construction had ever been carried out here in a time of one thousand years; therefore, archaeologists unanimously regarded the site of this city set up in Tang Dynasty had not undergone serious damage with many cultural relics buried deeply beneath the earth; Jinyang ancient city would be 'Pompeii' in China. Therefore excavation of the historic site of the ancient city of Jinyang would prove to be beneficial to the exploration, investigation, protection and study of the regulations of administration of the prosperous Tang Dynasty; moreover, it also proves to be beneficial to studying the vicissitudes of overall arrangements of the Chinese cities as well as of crucial significance for the schematic decisions to be taken for future development of Taiyuan City.

¹ The name Jinyang first took its appearance in the book <Spring and Autumn> in which it was recorded that '(in Autumn) of the thirteenth year of Ding Gong---Duke Ding's reign, Zhaoyang of Jin State entered Jinyang to start a mutiny'.

² <Historical Annals. The Zhao's Aristocratic Family> and <Historical Annals. Biographic sketches of the Qins>

³ <Book of Jin: Geographic Record> Bingzhou

⁴ <Book of North Qi. Biography of Wei Shou> and <Book of North Qi. Biography of Cui Ji>

⁵ <The New Book of Tang---Geographic Record>: 'The North Capital, set up in the Heaven-endowed first year'

⁶ <Continued edition of the Zi Zhi Tong Jian Historical Annals> Vol. 20

Background and Environment of the Historic Site of Jinyang Ancient City

According to historical record, after Jinyang City was destroyed by fire, the rulers of the Zhao's Song Dynasty allowed the scholars and common people to move into Pingjin County, but they ordered the people not to reside or do plantations on the site of Jinyang City⁷. So in the next one hundred years, the land in the city turned to be a wasted moor. Till the Emperor Zhenzong's reign, people began to move and reside there. When time came to the Fourth Year of Ming Dynasty at Emperor Hongwu's reign (1371 A.D.) a new city was built at the south part of Jinyang City⁸, while up to the first year of Jingtai's reign (1450 A.D.), the city was expanded to have another new city wall built with a circumference extended to seven li (approximately 3.5km)⁹; however, due to the fact that there had been no reconstruction program in large scale at the historic site of ancient Jinyang City after its destruction, therefore, after establishment of PRC, there was still the topographic sign of destruction left.

1 Topography and changes of the historic site

Based on the aero-photos taken in the fifth decade of last century and archaeological investigation in the sixth decade¹⁰ as well as recollections of the native villagers, there was still a section of the western city wall over 4000M in length left with a section of the inner city wall about over 1800M as well as a Taiyuan County with a circumference of over 3500M build at the early years of Ming Dynasty (Fig. 2). By that time, most of the native land there consisted of field of paddy rice with numerous footpaths crossing the fields; features of the place was divided into bench terrace of various grade from the west towards the east (Fig. 3).

Since the seventh decade of last century, the primary

geomorphic feature of the historic site showed some extensive changes, after the process of leveling the fields and soil preparation, the bench terrains disappeared while a greater part of the city wall was destroyed with only a section of the western city wall over about 600M in length remained (Fig. 4). And again because most of the paddy fields were replaced by greenhouse tents and cropping trade (Fig. 5), changes in production in turn induced changes in roads; some of the village paths had already disappeared from existence or their uses were altered, all these had rendered investigation on this ancient Jinyang City great difficulties.

2 Environment of the historic site and changes

Since the eighth decade of the last century, following the advance in economy, at the historic site of the ancient Jinyang City there were several countryside and village enterprises set up including some gypsum factories in succession in its circumferential areas (Fig. 6), with some small coal mines and coal storage yard (Fig. 7) as well as stone pits (Fig. 8); while these had induced an advance in the local economy, there also had brought some damages to the environment with changes in the topographic features in the areas of the historic site of this ancient city revealed through cutting off of the river water, destruction of plants (Fig. 8) and so on. All these had brought forth great influences on the background and environment of these historic sites.

3 Some more projects added to the historic site

Beginning from the fifth decade of last century, accompanying development of Taiyuan, several large-scale projects had also been established successively in this locality, which, while bring about conveniences to production and living, yet in the meantime had again produced damages to the background and environment of the historic site (Fig. 9).

In 1957-58, about 1000M from the west part of the historic site, the Jinci Road was built with a width of 9-10M from east to west; this road, however, destroyed in the first step the integrated feature of the ancient city of Jinyang while moreover, this had divided the historic site of this ancient city from the cemetery area and the historic sites of the ancient temples outside of this city; in 1975, at the central part of the historic site the No 73 highway was built with a width of 9 meters from south to north and transversely crossing through the ancient city from the east to the west; this not only had the integrated feature of this city damaged, but also had divided the ancient city into two parts. In 1987, the double-line Jinci Road was built at the central part of the historic site situated in a position of the middle city traversing from south to the north with a width of 20M between the east and west; thus this ancient city was

⁷The 8th Year of Song Yuanfeng Reign <Inscriptional writing and forward on the headstone of Congsheng Temple> which reads: "An imperial order was dispatched to destruct the old city of Taiyuan to be subordinate to Pingjin County---let the people there migrate to the new city". According to <Record of the Sheli tower in Huimin Temple> that " In spring of the fourth year of establishment of the nation, Taizong fought Liu Jiyuan at Hedong, soon Jiyuan surrendered in summer, the emperor ordered to have the original city destroyed and ordered people there to move into the new city."

⁸<Taiyuan County chronicle> issued in Jiaqing Reign of Ming Dynasty

⁹<Taiyuan Prefecture chronicle> by Guan Tinfang of Ming Dynasty

¹⁰<A record of investigation of ancient Jinyang City> by Xie Yuanlu, Zhang Han, <Cultural Relics> Vol.4 & 5, 1962

severed into two parts of the east and west; furthermore, the Jinyuan new district beginning to be constructed in 1998, its north part is only 200M away from the southern city wall of the west city of the ancient city of Jinyang City, even though this road was constructed with the modified method of first taking soil to be put on the earth surface and then be tamped firm for digging a basic trough for the construction of the building complex, in this way very little influences may be produced to the underground relics, yet this building complex is too close to the ancient city, it will destroy seriously the integrated feature of the ancient city, let alone it has again drawn a borderline not perceptibly to the southern part of the historic site of the ancient Jinyang City; in 1998 at the northern part of the historic site the south Taiyuan transit line of the express highway was built, which once again traverses through this ancient city from east to the west, let alone that this highway erects at the northern part of the historic site like a tall wall. It not only has split the historic site in the space, but also has destroyed the background environment of the relic city; in 2001 Dayun express highway was built at the western part of the historic site, and then once more its background environment was destroyed.

Challenge faced by the protection work for the historic site of the ancient city of Jinyang

1 Challenges deposited from expansion of the scale of the city with the southern shift of the focal point of the city

After establishment of the PRC, especially since the eighth decade of last century, following development of economy and advance of the society, Taiyuan City has been expanding successively with corresponding increase of urban population and surface area of the districts constructed year after year, simultaneously pressure between the urban area of Taiyuan City and the ancient city surely had been deposited in the aspect of protection of this ancient city, while recently following the gradual southern shift of the focal point of the city, another new high tide of construction was aroused; pressure for protection of the ancient city of Jinyang was increased in folds.

A. Rapid increase of population in Taiyuan City

If counted as non-agricultural population, from the record taken between 1918 to the present time, there has been greater amplitude in population increase, and it is increasing greater and greater day after day. Since 1918 (the 7th year of ROC) population in Taiyuan City increased from 50686 to 119713 up to 1931 (the 29th year of ROC); in 1949, its population was 190948; in 30 years, there was an increase of 140,000 equaling to an annual increase of 4700 people.

However, the population increased from 190948 of 1948 to 1144898 up to 1980¹¹, there was an increase over 950,000 people equaling to an annual increase of 31700 people; then from 1144898 in 1980 there was an increase up to 1,937,300 people in 1998¹², with an increase of 790,000 people or over, equaling to an annual increase of 43,900 people; while from 1,937,300 people in 1998 the population was increased up to 2,226,300 people in 2003¹³, there was an increase of nearly 290,000 people in 6 years equaling to an annual increase of 48,200 people in average (Fig. 10 & 11).

B. Annual expansion of the surface areas of the established districts in Taiyuan City

In 1949, city area of Taiyuan City was only 30 km² being restricted by the Yingze main street, Wuyi Road, North Street of the city and Xinjian Road. Beginning from the fifth and sixth decades the education training base was established in the southeastern part of this city while in the southwestern part of the city the industrial base was constructed. In middle stage of the 9th decade of last century, the southern border of the city developed to the area along the present South Inner Ring Street; when in 1998 as Taiyuan City first made the strategy and decision to shift the focal point toward the southern part of the city, Changfeng main street and construction of the Changfeng Bridge were taken as the tuning points, just in a short period of a couple of years, southern border of Taiyuan City had developed into the area along Changfeng main street along the whole line of Xuefu Street; furthermore, keeping pace with the shift of the key point of construction, urbanization of the surroundings of Changfeng main street quickly ensued, up to the present time, a complete new urban district had been formed primarily and successfully. Based on such a developmental speed and taking the mid-term and long-term plans of Taiyuan City, it could be predicted that up to the year around 2030, the southern border of Taiyuan City would expand to the area along the ancient city of Jinyang, The task of protecting the ancient city of Jinyang will be challenged directly by the development of Taiyuan City (Fig. 12).

C. Challenge brought about by rising of living standard

Development in economy drives the urban construction and rise of living standards of people as well as a high tide of construction of the city. In 1949, the total length of city road and highways was 63km occupying a surface area of 350,000M². In 1980, total length of highways increased to 423km with a surface area of 3,420,000M²; in 1995, total length of highways increased to 1051km with a surface area

¹¹ <Taiyuan Municipal chronicle> Vol II, P13-19

¹² 1999 <Taiyuan Yearbook> P267

¹³ 2004 <Taiyuan yearbook> P 272

of 16,040,000 M²¹⁴, which meant an increase of 15.7 and 44.8 times respectively (Fig. 13); average residential area per person increased from 7.07 M² at the end of the 'Seventh Five-Year Plan' to 11.28 M² by the middle stage of the 'Tenth Five-Year Plan' (2003) with an increase of 60%¹⁵. Similarly, average surface area of green land per person, public installations and construction of the pipe network also had a high rate of increase; while with increase of the living standards of people, the natural environment was correspondingly changed, and inevitably challenges would be faced in the task of protection of the ancient relics.

2 Challenges coming from rapid progress of urbanization with rise of the living standards of the city people as well as economic development

In the recent years, following closely the economic development, there have been great changes in the environmental conditions, living qualities and styles of living of all the residents living in the realm of the site of the ancient historical city of Jinyang; the historic site of ancient city of Jinyang has been challenged directly; for example, in Jinyuan Town of Jinyuan District in the central area of the historic site of the ancient city, there was a population of only 14,000 people at the beginning of PRC establishment, in 1964 it was 19,004 people, by 1990, population increased up to 33,188 people, and then to 34,204 in 1996, 35,535 in 2003¹⁶ with an increase by 1.54 times (Fig. 14). In the meantime, after development, the building complex of Guchengying Village of Jinyuan Town in the central area of the historic site expanded by 7.51 times¹⁷ (Fig. 15), the living houses of the population there were passing from simple one-floor flats to two-storied houses, some even have built their houses into three or four-storied houses (Fig. 16), these would threaten the underground relics of ancient Jinyang city to be destroyed to certain extent. At present, the small city being situated in Guchengying village once investigated by Xie Yuanlu and Zhang Han in the 6th decade of last century had already been gradually occupied by the living yards of the residents; civil houses because of rebuilding around the two palace halls had their historic sites already damaged (Fig. 17); on the walls of the western city wall which were comparatively well preserved, people had divided it into several small sections for the purpose of leading water for irrigation of the fields (Fig. 18), while

¹⁴ <Taiyuan Chronicle>, Vol. II, P. 148

¹⁵ 2003 <Taiyuan Yearbook> P 1

¹⁶ <Chronicle of Taiyuan Southern Suburban District> P150 and statistical data of district branch office of the Public Security Bureau

¹⁷ This growth times is calculated based on the relevant data of air photo in 1957, topographical map in 1979, topographical map in 1990 and archeological plotting chart in 2004

Jinyuan Phosphorous Fertilizer Factory simply destroyed a part of the city wall and had the factory built on the foundation of the city wall and so on and so forth. Protection of the ancient city of Jinyang is facing a great threat and bearing a great pressure.

3 Challenges brought about by the city planning¹⁸

After establishment of the PRC, Taiyuan City had made three sets of city development planning, they represented respectively the <Explanation with attached sketches of the master urban planning of Taiyuan City of Shanxi Province> completed in 1954, the planning term was 1954-1974; <A report about master urban planning of Taiyuan City> completed in 1982, the planning term was 1981-2000; <the master urban planning of Taiyuan City (1998-2010)> formulated in 1996, and the planning term extended from 1998-2010. Urban plan of Taiyuan City is a general arrangement of the development of Taiyuan City. It reflects the general trend of development of Taiyuan City. In these three urban plans, Taiyuan City is positioned as capital of Shanxi Province and an industrial base mainly engaged in energy and heavy chemical engineering. In the aspect of population control model formulated in these three urban planning, it is fixed from 900,000 in the first urban planning to about 2,080,000 in 2010 as stated in the third urban planning; usage of the land surface area also extended from 81.6 km² to be increased to planned urban land usage of 197 km² in 2010. Again it has been pointed out clearly in the third urban planning in the part of the remote-future planning that up to the middle of the 21st century, control of land usage for construction would definitely hold the thinking of having it controlled only in construction of the express highways around the city; on account of the fact that up to the present the scheme of protecting the ancient Jinyang City has not yet been formulated, therefore, if development will be carried out according to the mid and long-term planning, the latest up to the middle of the 21st century, the southwest region of Taiyuan City would be built on the historic site of the ancient city of Jinyang.

Exploration of the task of protecting the historic site of the ancient city of Jinyang

In the recent years, extension of the city scale and speeding up of urbanization have brought forth a lot of challenges to the task of protecting the historic site of the ancient city of Jinyang, while the research work on this ancient city has been lagged backward without any efficient scheme of protection proposed; as a result, more construction undertakings had been increased successively

¹⁸ <Taiyuan City Chronicle> Book II, P 117-120

in the range of the great historic site of the ancient city of Jinyang and even more and more zealously; although the third master planning of Taiyuan City has added the famous cultural ancient city to the orientation of Taiyuan City, yet in the meantime, the northern part of the historic site of this ancient city is again put under the one to be developed and opened up in the part of remote prospective plan with the passage of the express highway north to which this ancient city is situated. Because of this, we would like to carry out an investigation and study of the ancient city of Jinyang before orientation of the urban planning of Taiyuan City was put into practice, and ultimately have the plan of protecting this ancient city to be included in the general plans of developing Taiyuan City.

1 Protection of the great historic site should be legalized

For protecting the great historic site a long-standing protection organization and mechanism should be established, and in which a practical way of protecting cultural relic applicable and suitable to the native conditions of the locality should be established, and this makes the key link factor to decide whether the protection program will be actualized and practiced. In 2003, the local rules and regulations for protecting underground cultural relic “Ways of cultural relics protection administration of Taiyuan City” were formally put in practice. However, there are no articles definitely stipulated concerning protection of the underground cultural relics and special protection articles for historic site of the ancient city of Jinyang; but these local rules and regulations are certainly very important so far as the protection of the historic site of the ancient city of Jinyang is concerned; yet on account of the special condition of protecting this historic site of Jinyang ancient city, special ways should be notified in order to have this task to be effectively practiced in protection of the great historic site of the ancient city of Jinyang.

2 Investigation of the historic site and the historical remains

In order to legalize the ways of protecting the great historic site of the ancient city of Jinyang, first of all, the range of protection of the Jinyang ancient city should be fixed with corresponding schemes formulated while an archaeological investigation of the historic site will be the great antecedent and foundation of this protection scheme. Currently, the great earth in China looks like just a large piece of construction site, great waves of constructions are surging zealously one over the other; today under such a condition of construction expansion, if the investigation is carried out according to the regular routine model that investigation goes first and then follows formulation of the scheme of protection, particularly for planning the protection

work for the historic site of Jinyang ancient city, the result would be that investigation has been clear and successfully completed. A couple of years later, main areas of the historic site will be turned to new construction areas. On account of this, we must have our route of thoughts changed, we must borrow experience from other places in formulating their ways of protecting historic sites of cities, first a controlled range around the historic site of Jinyang ancient city should be delimited in advance aided by a serious and severe control over the scales and projects of construction, this will then make us be standing on the active ground rather than being passive in position; thus the task of protecting the ancient city will be successfully accomplished.

In formulating the plans of archaeological investigation, one must uphold the route of thinking to solve the academic problems and the ultimate purpose of protecting the great historic site firmly integrated, no matter whether in selecting the test spot for digging or carrying out an archeological test digging, we must hold the belief that academic issues must be solved while concurrently a better propaganda work should also be cared so as to have the general thought fully displayed in selection of the spot for a test digging. In carrying out the test digging, we must have both the idea of protection and exhibition to run through the entire work of test digging; we must understand that an archaeological test dig is just for future exhibit; to provide actual materials for the display while we must be able to extract archaeological information; therefore, during the archaeological test digging, we must put the work of protection in the first place, we must be infused all the time with the idea of protection. While in time of necessity, we have to practice protection as the first step and then digging the second, it is only by doing so can we build a strong foundation for the final exhibition of the historic site.

3 Schemes for protecting the Jinyang ancient city and the route of thoughts for the historic site demonstration.

A. Scheme of the historic site protection (Fig. 19)

Through an investigation for a couple of years, at present, we have investigated out a relatively complete city circle between two Jinci roads, which might be just the historic site area of the western city of the ancient Jinyang City. Based on historical record, the western city was the main part of the entire ancient city of Jinyang; therefore, at present, we decide to make the area between these two roads as the focal controlled area for protecting cultural relics, controlling strictly all sorts of constructive projects in any scale, strictly control increase of local population by taking the rule of ‘no in only out’ and gradually press down the population size till an ultimate emigration and hold the idea of building the historic site park.

As to the historic site area between the double track of

Jinci road and Fenhe River, it should be planned to become the controlled area for cultural remains protection by controlling strictly construction of industrial projects, limiting projects of large size, and keep the present life style so as to let it be the ecological garden area of the historic site.

In the peripheral and marginal areas of the historic site, according to their different functions, a definite controlled area will be delimited for construction; within this limited area, industrial projects and large-scale constructions will be forbidden; pollution is controlled and the ecological environment is kept with building of background environment compatible to the historic site.

Simultaneously while plans of protecting the ancient city of Jinyang have been well practiced, we have to collaborate with the Construction Planning Dept. of Taiyuan City actively so as to have our plans to be blended with the master planning of the city, only then the task of protecting the historic site of Jinyang ancient city could be accomplished to a further step.

B. Demonstration of the historic site

Demonstration and protection of the historic site are two parts of a work closely and firmly bound together; historic site protection is the basis of the historic site demonstration while the latter is for a better protection.

Historic site demonstration should erect the thought of revealing the great historic site; in the city, not only there are tangible heritages, but also it has held rich amount of historical, cultural and social information; it carries civilizations of human kind; because of this, in the aspect of historic site demonstration, we not only reveal the palace area and the Buddhist temple area, the most important thing is also to show people omni-directionally and selectively all those concerning human production and life styles, and not only we should pay attention to those tangible historical relics, but more importantly we should reveal to people those visible relics together with those invisible scenes they had attached to. Only by doing so can we then recover a complete history.

In demonstrating the historic site, we must depend upon different contents of the relic materials and different existence and positions of such materials in time and space to reveal their real form and site purposely after they were unearthed; the revelation is to recover the original scenes, sometimes for those remained in a larger size of areas, those with simpler structures may be shown with imitations

4 Control city scale and build a harmonic society

It is a difficult problem of the whole world concerning existence of the incompatible relationship between protection of relics and historic site and local economic development; it has been disturbing sophistications to many countries and districts as a whole. In 2001, the Development

Program of the United Nations included the 'Planning study of protection of Jinyang ancient city of Taiyuan City and exploitation of resources of tourism' in the working plan of the program for 'planning, administration and development of cities in the 21st century' of the United Nations and a fund will be allocated to be used for formulation of schemes on integration of protecting the historic site of the ancient city of Jinyang and the resources of tourism. Through practice for a couple of years, we have recognized that protection of cultural relics and economic constructions are either contradictory to each other but again are inter-dependable, it forms a unified body of contradiction; we should not talk simply about protection of cultural relics so far only the relics are concerned, but we must put the process of cultural relics protection into the major social system to study and operate, only by doing so will the subject gain proper orientation and have the aim properly directed to. On account of this point of view, we propose the idea of repositioning or re-orientation of the city; controlling scale of the city and realizing a sustained development for it; we also wish to make the program of protecting the great historic site of ancient Jinyang City as a turning point to motivate investigation and study in the problem of city development so as to lay a foundation for a complete and prefect formulation for the overall planning for Taiyuan City.

The ancient historic site is a precious resource, first it needs protection primarily, administration should be emphasized and rational exploitation can then be practiced followed by sustained utilization. We must blend protection and demonstration of Jinyang historic site; construction of ecological environment; cultivation of humanistic inside information as well as resources of tourism together into an integrated entity so that an idea of pertaining to sustained development could be erected, predatory development could be prevented; then a sustained, long-term and effective protection for the great historic site of the ancient city of Jinyang could be surely guaranteed for a rational utilization!

Abstract

The current progress of civilization and the extension of urban size not only challenge the protection of cultural relics, also have adverse effects for ecological environment. Many cities have become the machines of consuming resource, making pollution, and extend unlimitedly.

The relics of Jinyang ancient city are situated in the suburb area of Taiyuan City, being “Pompeii” in China. In order to better protect Jinyang ancient city, we once proposed the preliminary protection idea. We have raised new ideas after carrying out in 2003 the research on the project “Protection and Development of Tourism for Ancient Jinyang City in Taiyuan”, in which we collaborated with the department of “21st century urban planning, management and development” of Bureau for Development of the United Nations. These new ideas include strengthening legislation protection, control city scale, re-positioning of the city, etc.

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Fig. 1 Location drawing of ancient city relics of Jinyang



Fig. 2 Status drawing of ancient city relics of Jinyang investigated in 1960's



Fig. 3: Air shot photo of the ancient city relic area of Jinyang in 1950's



Fig. 4: Residual city wall photo of the ancient city relics of Jinyang

area of Jinyang



Fig. 5:
Fruit and vegetable greenhouse photo of Guchengying Village in the ancient city relic area of Jinyang



Fig. 6
Gypsum plant photo in the ancient city relic area of Jinyang



Fig. 7
Coal storage yard photo in the ancient city relic



Fig. 8
Stone pit at the west mountain foot and vegetation destruction photo of the ancient city relics of Jinyang

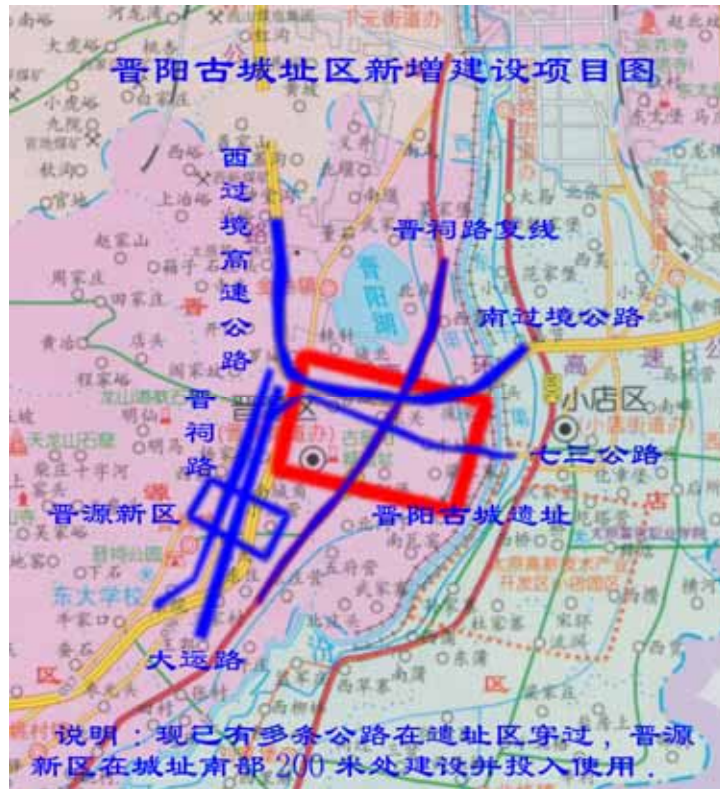


Fig.9 New construction project chart in the ancient city relic area of jinyan

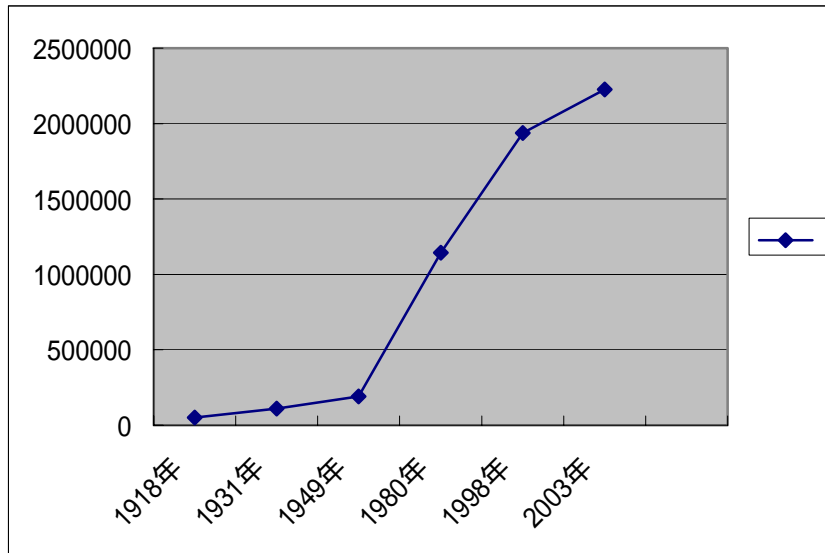


Fig. 10 Urban population change chart of Taiyuan City

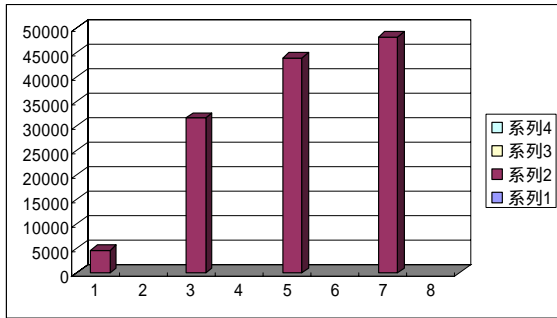


Fig. 11
 Bar chart of annual average population growth of Taiyuan City

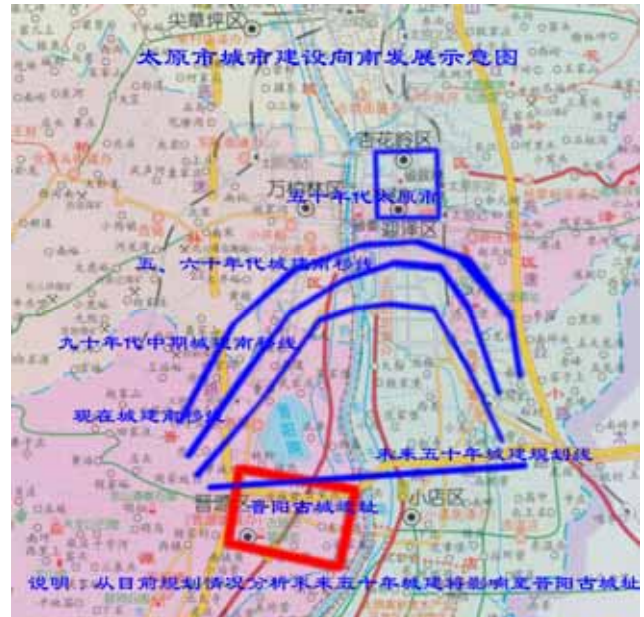


Fig. 12
 Urban development change chart of Taiyuan City

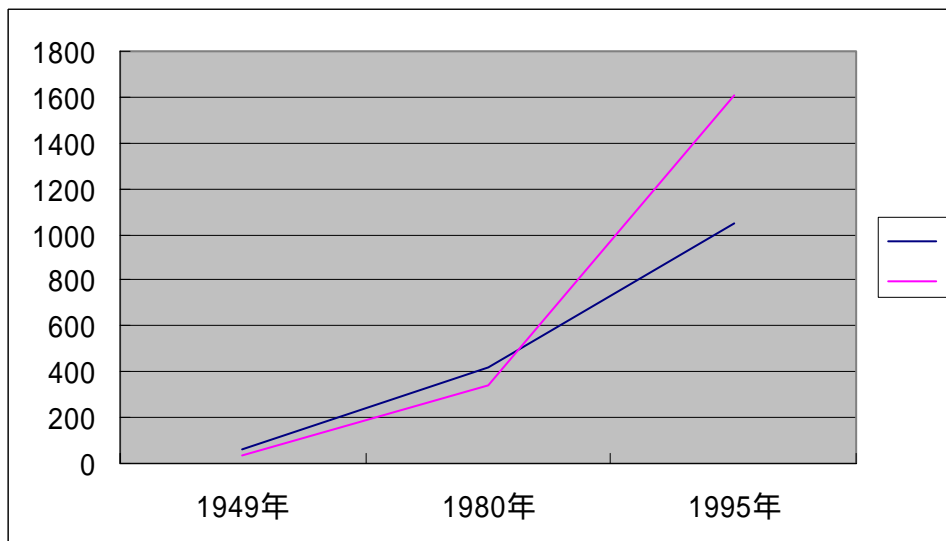


Fig. 13 Total road length and area development change chart of Taiyuan City

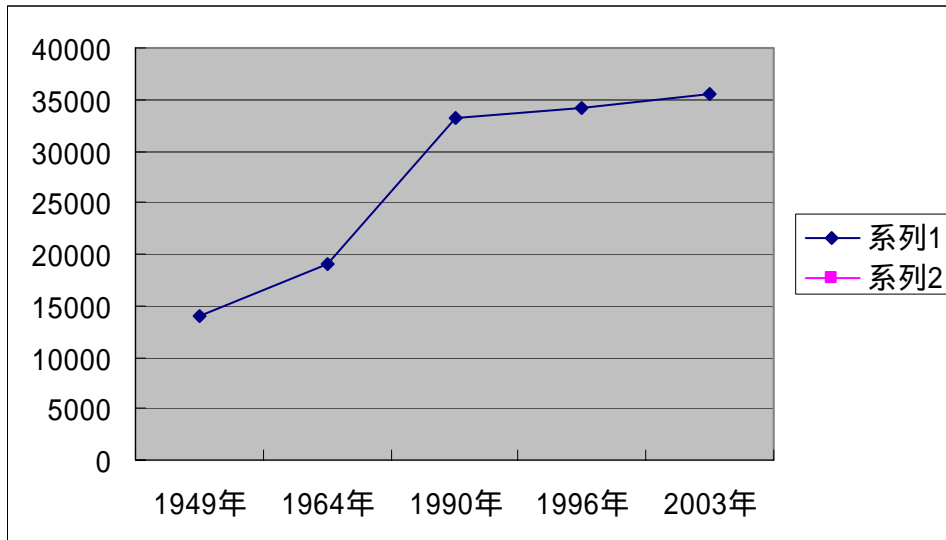


Fig. 14: Population development change chart of Jinyuan Town, in Jinyuan District in the ancient city relic area of Jinyang

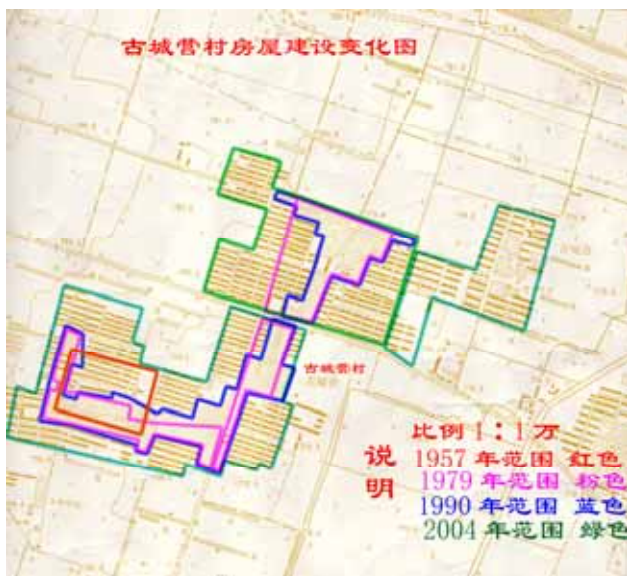


Fig.15: House development change chart of Guchengying Village in Jinyuan District in the ancient city relic area of Jinyang



Fig. 16 House development construction chart of Guchengying Village in Jinyuan District in the ancient city relic area of Jinyang



Fig 17



fig 20



fig 18



fig 21



fig19