

The Architecture of Liao Dynasty and Jin Dynasty's Different Inheritance Leading to the Style of Tang Dynasty- Analysis from Liao, Jin Monastic Architecture in Datong Examples

JI Jianle, XIE Yiyin, CHEN Rong, HE Shuyue

Abstract—Tang Buildings represents the highest level in China's traditional wood structure building architecture. The Song, Liao, Jin Dynasty witnessed the evolution built on the Tang Building styles. There are many sites for the monastic architecture in Liao and Jin dynasties in Datong. From the analysis of the sites, it is concluded that: the evolution comes directly from Tang style, but there is a complication of details, with the wide usage of inclined Dougong.

Keywords—Liao's Architecture, Jin's Architecture, Datong, Temple, Tang-style, inheritance, Dougong.

I. LIAO, JIN MONASTIC ARCHITECTURE IN DATONG

Tang dynasty's buildings represents the highest level in China's traditional wood structure building architecture.

After the Tang Dynasty, Song, Liao and Jin were made up from three ethnic groups. They all inherited the Tang's architectural design style and method of construction, while reflects characteristics respectively. Especially, the Liao and Jin, which are made up of the rulers of minority in western China, stands out during the inheritance process. The buildings are concentrated in Datong in Shan Xi province nowadays.

Datong is renowned as the place of conflict, with many historical events taking place. Datong today is still famous for its rustic street lane and ancient architectures, showing the unique lingering charm of northern China.

Since the Northern Wei Dynasty period, Datong has become the center for Buddhism in North China. The magnificence at that time was shown by the craftsman via their hands engraved Yungang Grotto. During the end of Tang and Five Dynasty, the Buddhism degenerated, and took the rebirth in Liao. Liao and Jin dynasty was separately dominated by Khitan and Jurchen, who maintained the original belief of Fetishism and Shamanism. On the other side, they absorbed Buddhism culture and built and took the national religious ritual system as the regime's basis of theocracy. Therefore, Liao and Jin period saw the building up of many great monastic architectures, which represents the highest standard of wood structure buildings at that time. Today, the exterior civilization still shines although it has gone through too many wars.

II. INVESTIGATE LIAO AND JIN DYNASTY'S DIFFERENT INHERITANCE WAY TO TANG ARCHITECTURE THROUGH RESEARCH INTO MONASTIC ARCHITECTURE

In order to understand the architectural art of Liao and Jin period, Datong's monastic architecture is an indispensable part. At the same time, it is also very important to understand northern minority nationalities' inheritance way of Tang wood structure building. (Fig.1)

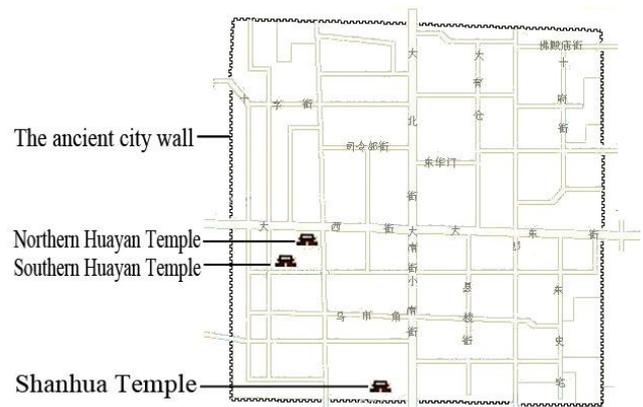


Fig.1 The square gate of North Huayan Temple. Copyright 2011 JI Jianle, all rights reserved used by permission.

A. Northern Huayan Temple

There are three well-preserved monastic architecture complex in Datong: Southern Huayan Temple, Northern Huayan Temple and Shanhua Temple. First, Huayan Temple will be discussed. (Fig.2) This famous Buddhist Temple started in Liao, during which time the culture lags behind and there was lacked of philosophy developers. Therefore, the Zen of Buddhism was not popular, while Huayan sect, Mi sect, Pure Land sect prosperous. Huayan sect arises at the historic moment, which can be backed by the Hua-yan-jing. The sect also serves as the royalty ancestor temple, which made it great in scale. However, the current pattern was formed in Ming's dynasty. Due to Khitan's original belief (believing in ghosts), Huayan Temple break conventional form of lying north to south, letting the Main Hall and Bojiajiaoan face to be east. Liao's people maintained the national flavor while imitating the style of central plains, showing the strong self-consciousness of Han Culture.



Fig.2 Northern Huayan Temple sites. Copyright 2011 JI Jianle, all rights reserved used by permission.

Northern Huayan Temple has main buildings standing on the medial axis, such as two-inlet courtyard, Tianwangdian (the hall of four kings), Guanying Pavilion and Ti-tsang Pavilion. Two corridors particularized aside. The groups of buildings were well spaced and situated. The door head of square gate in the courtyard embedded brick carves with Chinese characters: nian hua xiao and qing zhu jian (two stories of Buddhism. Fig.3). The Buddhism allusion strewed the courtyard naturally.



Fig.3 Northern Huayan Temple's Square Gate of Inner Courtyard. Copyright 2011 JI Jianle, all rights reserved used by permission.



Fig.4 Northern Huayan Temple—The Main Hall. Copyright 2011 JI Jianle, all rights reserved used by permission.

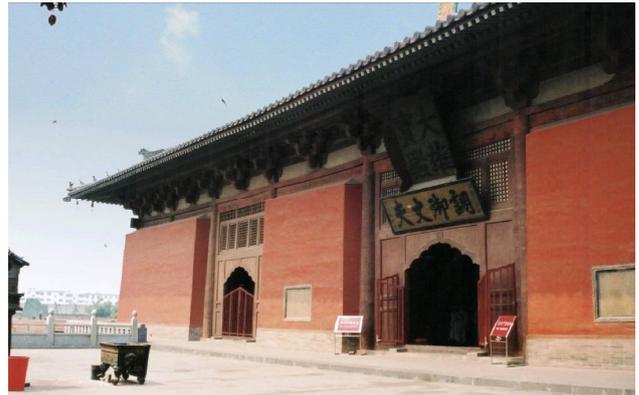


Fig.5 Northern Huayan Temple—The Main Hall. Copyright 2011 JI Jianle, all rights reserved used by permission.

The Main Hall is located behind the small courtyard. (Fig.4, Fig.5) The current architecture was rebuilt in 1140A.D, on the huge stylobate, representing the unique feature of Liao Jin Architecture. Its width is nine Kaijian (the space between two columns), and depth is five Kaijian, single-layer eave and five ridge roof, which is the largest existing wood structure architecture with single-layer eave. Central Kaijian and left and right side Kaijian open traditional gates, with a Ming dynasty signboard on it. The colored glaze Chiwen (which is made of colorful glass and looks like a bird head, located at the end of each ridge of the roof) of large-size on main ridge, is the relic of Jin's dynasty. (Fig.6) Dougong (interlocking wooden brackets, often used in clusters to support roofs and add ornament) is big and with various changes, and the central Kaijian's additional Dougong-set use 60° inclined Dougong, while the side Kaijian is 45°. (Fig.7, Fig.8) The inclined Dougong is also the main feature of Liao and Jin architecture, using for bearing and decoration. Making convenience to Buddhism religious rites, the designer reduced 12 columns to expand the front space. The five Buddhas and Pharmapala heavenly King (included to 32 figures of Buddha of Ming Dynasty) are located in the middle of the building, surrounded by four huge Qing-style fresco.

B. Southern Huayan Temple



Fig.6 Northern Huayan Temple—Chiwen on the Main Hall. Copyright 2011 JI Jianle, all rights reserved used by permission



Fig.7 Northern Huayan Temple—Dougong and Ceiling of the Main Hall. Copyright 2011 JI Jianle, all rights reserved used by permission



Fig.8 Northern Huayan Temple—Dougong of the Main Hall. Copyright 2011 JI Jianle, all rights reserved used by permission



Fig.9 Southern Huayan Temple—The hall of Bojiajiaozang. Copyright 2011 JI Jianle, all rights reserved used by permission

Southern Huayan Temple is just 10 meters away from the Northern one. Despite some Datong's historical relics in the front courtyard, the Bojiajiaozang in the backyard is the main hall of the temple, which was built in 1038A.D, using for storing ancient books and records. (Fig. 9, Fig 10) The temple's Width is five Kaijian. Depth is four Kaijian, with single-layer, nine ridge roof and long overhang eaves. The whole temple is simple, restrained and harmonious in style, with construction method of column-

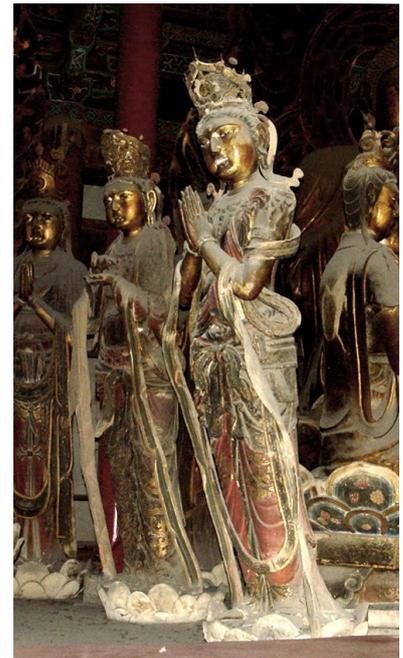


Fig.10 Southern Huayan Temple—The hall of Bojiajiaozang.. Copyright 2011 JI Jianle, all rights reserved used by permission

reduction method, making clear space. 31 statues on Buddha Altar all have different expressions, showing distinctive personality and thriving vitality. We can see mundane aesthetic taste through the graceful posture and waistband. (Fig. 11)

C. SHANHUA TEMPLE

Another important architecture in Datong -Shanhua Temple, is the existing biggest, whole and intact Liao and Jin architectural complex in chin. The temple started in Tang



Fig.11 Southern Huayan Temple—Bojiajiaozang's buddha.. Copyright 2011 JI Jianle, all rights reserved used by permission

Kaiyuan period (713-741A.D), named Kai Yuan Si at that time. It experienced big breaking in the end of Liao and had repaired in Jin dynasty, and further rebuilt in Ming's dynasty, during which time it was renamed as the Shanhua temple. The temple was north-south oriented, with its main buildings sitting along sides the main center lines : Tianwangdian, Sanshengdian (the hall of three sages), the Main Hall in sequence. There were Bodhisattva pavilion sites and Samantabhadra Pavilion in front of the Main Hall, with another south and east-side temples. All together, there were seven buildings, representing the traditional scheme of "Qielanqi tang"(the rule of temple buildings). There was a colored glaze five-dragon wall from Xingguo Temple in the west side of the temple.

As the gate of temple, Tianwangdian was built in Jin Dynasty(Fig.12), got Statue of Four Kings inside, with five Kaijian Width, four Kaijian depth, single-layer eave and five ridge roof, as Jin dynasty's relic- Sanshengdian. (Fig.13) The 60 degree's inclined Dougong under side Kaijian's eaves, has the shape of bouquets of a flower, representing its greatest characters in the Jin architecture history. (Fig.14) There are quite a few column-reductions inside, with only four main ones and four auxiliary columns supporting the beam frame and no

of Sanshengdian is from the stature of Huayuan Sansheng (three oracles).

Samantabhadra Pavilion is located in northwest of Sanshengdian, where Samantabhadra lives in. Unfortunately,



Fig.14 Shanhua Temple—The Inclined Dougong of Sanshengdian. Copyright 2011 JI Jianle, all rights reserved used by permission



Fig.12 Shanhua Temple—Tianwangdian. Copyright 2011 JI Jianle, all rights reserved used by permission



Fig.15 Shanhua Temple—Inside of Sanshengdian. Copyright 2011 JI Jianle, all rights reserved used by permission



Fig.13 Shanhua Temple—Sanshengdian. Copyright 2011 JI Jianle, all rights reserved used by permission



Fig.16 Shanhua Temple—Samantabhadra Pavilion. Copyright 2011 JI Jianle, all rights reserved used by permission

Wenshu Pavilion was ruined in a fire disaste, which was axial symmetry with Samantabhadra. The whole building has two different eaves, upper eaves is nine-ridge roof; however, lower



Fig.17 Shanhua Temple—The Inclined Dougong of Samantabhadra Pavilion. Copyright 2011 JI Jianle, all rights reserved used by permission



Fig.18 Shanhua Temple—The Main Hall. Copyright 2011 JI Jianle, all rights reserved used by permission



Fig.19 Shanhua Temple—Inside of the Inclined Dougong of the Main Hall. Copyright 2011 JI Jianle, all rights reserved used by permission

eaves have wooden balcony and railing. (Fig.16) And it has 60° inclined Dougong. (Fig.17)

The Main Hall was built in Liao's dynasty and repaired in Jin's dynasty, which has memorial archway and Zhonggu Pavilion in front of the hall. (Fig.18) The hall has seven-Kaijian Width and five-Kaijian depth, with single-layer eave and five ridge roof. Dougong is five tier Dougong with cross beam. The central Kaijian and side Kaijian has 60° and 45° inclined Dougong. (Fig.19, Fig.20) Using the same column-reduction method, the hall offers a roomy space. The special sunk panel with two-layer Dougong, was built in Liao's dynasty. (Fig.21) However, the decorative pattern of Dragon and Phoenix was drawn in Ming Dynasty. The Five Buddha was surrounded by 24 vivid golden pharmapala statues, colored drawing in Qing's dynasty. The most amazing one is Helidinan Statue.(Fig.22)

III. THE CHARACTERS OF LIAO AND JIN DYNASTY'S ARCHITECTURE

Through the analysis of the architecture complex above, we can feel that Song, Liao and Jin inherited Tang's architectural art



Fig.20 Shanhua Temple—Outside of the Inclined Dougong of the Main Hall. Copyright 2011 JI Jianle, all rights reserved used by permission



Fig.21 Shanhua Temple—The special sunk panel of the Main Hall. Copyright 2011 JI Jianle, all rights reserved used by permission

in different ways, due to geographical position and wars. For instance, Song's building style is flexible, with higher slope of roof and column shaft, making every Kaijian's width and Dougong's rate reduced. (Fig.23, Fig.24, Fig.25) In this way, the appearance can be easily distinguished from Tang's architecture which is strong, steady and huge. (Fig.26, Fig.27, Fig.28)

Kitan rised in Wudai period, directly inherited Tang style-smooth roof slope, lone overhang eaves, huge Dougong and stocky columns. While Jin's style absorbed the features of Song and Liao, for example, the column-reduction and column-shift were widely used in Jin's dynasty. And the inclined Dougong became more complicated. This trend seems to reach a high level until Jurchen ruling China at second time—Qing Dynasty.(Fig.29, Fig.30)

IV. CONCLUSION



Fig.22 Shanhu Temple—Helidinan statue in the Main Hall. Copyright 2011 JI Jianle, all rights reserved used by permission

The Liao and Jin architecture in Datong district represents high standards. While the Khitan, Jurchen and other degenerated into ethnic groups gradually evolved into the social formation and life style of Han, they also absorbed the han culture and art ' s essence, with built in characters of their own styles. Song people are gentle in war, while Liao and Jin's people are bold and unconstrained, not only in

politics but also the building styles.



Fig.23 Song's architecture. Copyright 2011 JI Jianle, all rights reserved used by permission



Fig.24 Dougong of Song's architecture. Copyright 2011 JI Jianle, all rights reserved used by permission



Fig.25 Dougong of Song's architecture. Copyright 2011 JI Jianle, all rights reserved used by permission



Fig.26 Tang's architecture. Copyright 2011 JI Jianle, all rights reserved used by permission



Fig.27 Tang's architecture. Copyright 2011 JI Jianle, all rights reserved used by permission



Fig.30 ougong of Qing's architecture. Copyright 2011 JI Jianle, all rights reserved used by permission

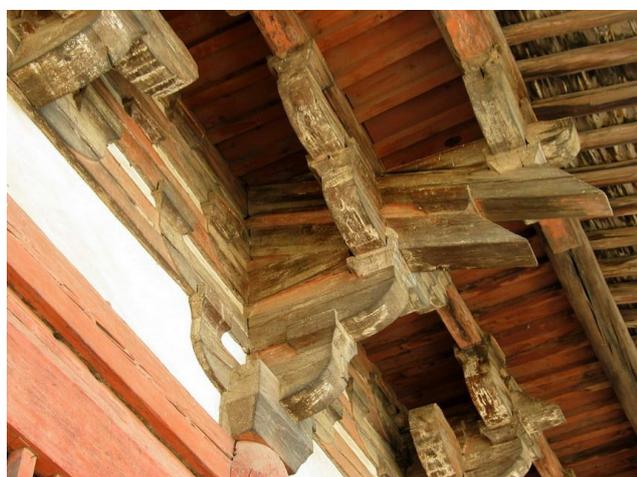


Fig.28 Dougong of Tang's architecture. Copyright 2011 JI Jianle, all rights reserved used by permission



Fig.29 Qing's architecture. Copyright 2011 JI Jianle, all rights reserved used by permission

REFERENCES

- [1] G.X.PAN, *History of Chinese architecture*, Beijing: China Architecture & Building Press, 2009.
- [2] Y.B.XIE "Liao's status in Bojiajiaozang Hall of South Huayan Temple", *Journal of Shanxi Datong University(Social Science)*, Vol.23, No.4, 2008(08): 35-37.
- [3] D.Z.LIU. *History of Chinese ancient architecture*, Beijing: China Architecture & Building Press, 1984.
- [4] B. Smith, "An approach to graphs of linear forms (Unpublished work style)," unpublished.
- [5] G.T.WANG. "The protection and development of historical towns", *Architectural Journal*, 2005(2): 5-7.
- [6] Q.X.LOU, *Twenty lecture of ancient Chinese architecture*, Beijing: Sanlian Publishing House, 2001.
- [7] F.S.CHAJ, Z.W.LUO. *Famous Chinese temples*, Beijing: China Machine Press, 2008.
- [8] L.Y.Wu, Theory of city culture, *Urban studies memoir of Wu Liangyong (1986-1995)*, Beijing: China architecture industry press, 1996..
- [9] Y.P.Bai,X.J.Zhang. Development of Nanjing scenery spots, *Chinese garden*, 2006(8): 67-70..
- [10] Xu Qianli. *Globalization and regional—A "modernity" question., Architects*, 2004(6): 68-75..
- [11] Z.Yue, B.J.Burley, "Non-euclidian methods to characterize the masters of the net garden,Suzhou,China, (Published Conference Proceedings style)," in *Proc. 4th IASME/WSEAS International Conference on Landscape Architecture*, Angers, 2011, pp. 101-105.
- [12] G. R. Faulhaber, "Design of service systems with priority reservation," in *Conf. Rec. 1995 IEEE Int. Conf. Communications*, pp. 3-8.
- [13] M.Van De Toorn, "Theory and practice in landscape architecture:the role of reserch, (Published Conference Proceedings style)," in *Proc. 4th IASME/WSEAS International Conference on Landscape Architecture*, Angers, 2011, pp. 17-18.
- [14] .H.Wang, S.H.Wang, Landscape design of the low-income community: a case of Sheshanxincheng residential quarter (phase 1) in Nanjing, China. (Published Conference Proceedings style)," in *Proc. 4th IASME/WSEAS International Conference on Landscape Architecture*, Angers, 2011, pp. 106-117
- [15] W.T.Jiang. Urgently develop the potential value of city wall tourism resources of Nanjing, *Nanjing social science*. 2001(3): 88-90.
- [16] X.M.Zhang. Urban landscape feature under the influence of traditional culture, *Journal of Nanjing Forestry University*, 2006(4): 98-101..
- [17] C.G.Shen. Discuss about the City Wall of Nanjing's historical value and the declaration of World Culture Heritage. *Modern Urban Studies*, 2007(6): 47-55.
- [18] F.Han, World Heritage Cultural Landscapes and their international new trend, *Chinese garden*, 2007(11): 18-21.

- [19] L.Li. "Expression and exploring of Cultural—Analysis of contemporary urban landscape design of humanistic tendency", *Planners*, 2001.6(17): 57-60.
- [20] M.Etemadi, K.Kia. Environmental psychology and school space designing. in *Proc. 4th IASME/WSEAS International Conference on Landscape Architecture*, Angers, 2011, pp.43-48.
- [21] S.C.Liang. *Image of the history of Chinese architecture*, Beijing: Sanlian Press, 2011.
- [22] Q.X.Lou, *cooler Beam and building*, Beijing: Tsinghua University Press, 2010.
- [23] J.J.Chen, *Fengshui and building*, Beijing: Central Compilation & Translation Press, 2010
- [24] S.C.Liang, *Talking about architecture*. Beijing: World Press, 2006.
- [25] D.Y.Guo. *History of Chinese ancient architecture*, Beijing: China Architecture & Building Press, 2009..
- [26] S.Lin, *Chinese Architecture: art and artifacts*. Beijing: Foreign Language Teaching and Reserch Press. 2011
- [27] B.J.Li, *Making Tang's building*. Beijing: China Architecture & Building Press, 2007.
- [28] Q.J.Wang *Museum--Shanxi Architecture*. Shanghai: Shanghai brilliant publishing house, 2009
- [29] R.Chen. "Silent Memory-Discussion on reuse the ancient city wall of Nanjing in View of urban landscape". in *Proc. 4th IASME/WSEAS International Conference on Landscape Architecture*, Angers, 2011, pp. 140-145
- [30] R.Patrascu, E.Minciuc, I.Diaconescu, "Evaluation of the environmental impact of a cogeneration plant for an urban area". in *Proc. 4th IASME/WSEAS International Conference on Landscape Architecture*, Angers, 2011, pp. 118-121
- [31] D.F.Xin. "Shanhua Temple in Datong City and Zhu Bian's Tombston", *Studies In World Religions*. 2009(1):39-49
- [32] M.Y.Zhang, *Study of Sculpture—the Mall Hall of Shanhua Temple*. Beijing: People's fine arts publishing house. 2011.
- [33] Z.G.Zhang *Ancient houses in Shanxi*. Beijing: China Architecture & Building Press, 2009
- [34] Z.Gao. *Datong: Beiwei's Pingcheng ,Liao&Jin's Xijing—history of the city*. Beijing: China Architecture & Building Press, 2011

Architecture, Nanjing Forestry University, 159 Longpan Road, Nanjing 210037, China. E-mail: canmay22@yahoo.com.cn

Ji Jianle. Born in Nanjing, Jiangsu Province, China. 1978. Master of Arts, Southeast University. Major in Art and Design, Architecture Department. Author devoted Architectural history, landscape planning and design, urban design. Now I'm a lecturer of College of Landscape Architecture, Nanjing Forestry University. My core courses such as Architecture history of China and Foreign countries, Elementary Design of Architecture, and I did a lot of research and study on it. Address: College of Landscape Architecture, Nanjing Forestry University, 159 Longpan Road, Nanjing 210037, China. E-mail: jijianle@yahoo.cn

XIE Yiyin. Born in Wuxi, Jiangsu Province, China. College of Landscape Architecture, Nanjing Forestry University. Student. Bachelor in Architectural Design in Landscape. Research in landscape planning, Architectural history. Address: Room 301, Building 26, Yu Jing Wan Garden, Yin Xiu Road, Wuxi, Jiangsu 214000, China. E-mail: elyntse3788@gmail.com

CHEN Rong. Born in Nanjing, Jiangsu Province, China. 1976. Ph.D of Landscape Architecture, Nanjing Forestry University, studying in Garden Plants & Ornamental Gardening Major, College of Landscape Architecture. Author devoted to landscape architecture design and landscape planning design. The topic of my doctoral thesis is <The establishment and expression of landscape theme in urban park green space>, and I did a lot of research and study on it. I am interested in the research of Chinese traditional houses and the Ancient City Wall in Nanjing, and also take great importance to the influence of history and culture in urban landscape design

HE Shuyue. Born in Hefei, Anhui Province, China. 1981. College of Landscape Architecture, Nanjing Forestry University. Lecturer. Master of Arts in Design, Hefei University of Technology. Author devoted Landscape and urban environmental planning and design, interior design, graphic design. Address: College of Landscape