

FROM JIANGNAN TO SICHUAN:
YUAN ARCHITECTURE ALONG THE YANGTZE RIVER

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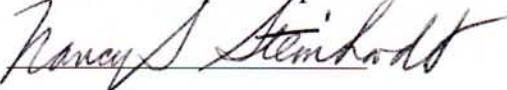
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ABSTRACT

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Nancy Shatzman Steinhardt

This dissertation compiles evidence and offers analysis for all known buildings along the Yangtze River in China that were built during the Yuan dynasty, a short-lived dynasty ruled by Mongols from 1271 to 1368, and often considered a transitional period in Chinese architectural history. Investigated areas include Sichuan, Chongqing, Hubei, Anhui, Jiangsu, and Zhejiang provinces and Shanghai, which are grouped in to three major areas: Sichuan, the Middle Yangtze River and Jiangnan. Through this research, the author attempts to find out how individual Yuan buildings in south China differ and resemble one another, how they are distinct from contemporary buildings in the north, and how they can help us understand the transformation of architecture from Song to Ming.

In order to elaborate the construction history, religious functions, and structure of each building, I surveyed textual as well as physical evidence by studying gazetteers and inscriptions, and measuring, drawing and photographing every building. This documentation of individual buildings is also combined with comparative studies involving Yuan buildings in the northern provinces of China.

Through my investigations, I demonstrate that Yuan architecture in Sichuan can be described as a branch developed on the basis of Jin (1115-1234) architecture in the north. Yuan architecture in Jiangnan, on the other hand, follows the archaistic regional style ever since the Northern Song (960-1127) and also reflects the reinforcement of the twelfth-century architectural manual, *Yingzao fashi*. The regional disparity in Jiangnan and Sichuan is due to the transformation of the political situation that are caused by migration waves and the imbalanced development of economy ever since the fall of the Northern Song.

The Yuan dynasty is undoubtedly a transitional period in two significant ways: old tradition generated under different pre-Yuan regimes, such as Song and Jin, developed separately under the rule of Mongols in different regions; and those regional styles of Yuan that were later absorbed by the new Ming official style that tried to revive of Song tradition as well as to establish a new powerful dynastic style to legitimate its rule.

TABLE OF CONTENTS

Abstract	iii
List of Tables	vii
List of Maps	viii
List of Illustrations	ix
Introduction	1
Chapter One. Yuan Buildings in Jiangnan: Jiangsu, Shanghai and Zhejiang	15
1. Yanfusi延福寺.....	16
2. Tianningsi天寧寺.....	23
3. Zhenrusi真如寺.....	28
4. Yunyansi雲岩寺.....	34
5. Jijiansi寂鑒寺.....	41
6. Xuanyuangong軒轅宮.....	46
Chapter Two. Buildings along the Upper Yangzi River: Sichuan and Chongqing	53
1. Lifengguan醴峰觀.....	54
2. Dongyuemiao東嶽廟.....	60
(1)Feilaidian飛來殿.....	61
(2)Xiangdian香殿.....	68
3. Bao'ensi報恩寺.....	71
4. Yong'ansi永安寺.....	76
5. Wulongmiao五龍廟.....	83
6. Qinglongsi青龍寺.....	88
7. Pingxianglou平襄樓.....	92
8. Qiqushan damiao七曲山大廟.....	100
(1)Pantuoshidian盤陀石殿.....	101
(2)The Main Hall of Guandimiao關帝廟正殿.....	106
9. Yong'anmiao永安廟.....	110
10. Doukousi豆叩寺.....	114
11. Dubaisi獨柏寺.....	118
Chapter Three. Comparison of Jiangnan and Sichuan Building	121
1. Plan.....	121
2. Bracket Sets.....	129
3. Roof Structures.....	152
4. Conclusion.....	166

Chapter Four. Yuan Buildings along the Middle Yangtze River and in the North	168
1. Yuan architecture in Wudangshan 武当山	168
2. Ming buildings in Anhui	176
3. Yuan buildings in the North	178
Conclusion	200
Bibliography	205
Glossary	213
Tables	228
Maps	237
Illustrations	243
Index	383

LIST OF TABLES

Table 1. Building List of Jiangnan.....	228
Table 2. List of Modern Research on the Buildings in Jiangnan.....	229
Table 3. Building List of Sichuan and Chongqing.....	230
Table 4. Dimensions of the Plans in Jiangnan.....	230
Table 5. Modular Dimensions of the Bracket Sets in Jiangnan	231
Table 6. Modular Dimensions of the Bracket Sets in Sichuan	231
Table 7. <i>Litiao</i> of the buildings in Sichuan.....	232
Table 8. <i>Dangong</i> or <i>chonggong</i> on <i>tiao</i>	232
Table 9. Configuration of the members atop eave columns.....	233
Table 10. Similarities and Dissimilarities in Jiangnan and Sichuan.....	234
Table 11. Comparison of Yuan buildings in Sichuan, Jiangnan and Northern China.....	236

LIST OF MAPS

Map 1. Map of China Today.....	237
Map 2. Map of Southern Song and Its Neighbors in 1208.....	238
Map 3. Map of Yuan in 1280.....	239
Map 4. Map of Jiangnan, with structures plotted.....	240
Map 5. Map of Sichuan and Chongqing, with structures plotted.....	241
Map 6. Map of China Today.....	242

LIST OF ILLUSTRATIONS

Figure 1.1a. North-south sectional view(present),Main Hall, Yanfusi.....	244
Figure 1.1b. East-west sectional view(present),Main Hall, Yanfusi.....	244
Figure 1.1c. Plan of Main Hall(present), Yanfusi.....	244
Figure 1.1d. North-south sectional view(original),Main Hall, Yanfusi.....	244
Figure 1.1e. East-west sectional view(original),Main Hall, Yanfusi.....	244
Figure 1.1f. Plan of Main Hall(original), Yanfusi.....	244
Figure 1.1g. Sectional view of capital set, Main Hall, Yanfusi.....	245
Figure 1.1h. Picture of the rear view of capital set, Main Hall, Yanfusi.....	245
Figure 1.1i. Picture of the front view of capital and intercolumnar sets, Main Hall, Yanfusi.....	245
Figure 1.1j. Sectional view of intercolumnar set, Main Hall, Yanfusi.....	245
Figure 1.1k. Picture of the rear view of intercolumnar set, Main Hall, Yanfusi.....	245
Figure 1.1l. North-south sectional view, Main Hall, Yanfusi.....	246
Figure 1.1m. Picture of structure of front bay, Main Hall, Yanfusi.....	246
Figure 1.1n. Picture of <i>lan'e</i> and <i>you'e</i> , Main Hall, Yanfusi.....	246
Figure 1.1o. Picture of shuttle column and column base, Main Hall, Yanfusi.....	246
Figure 1.1p. Column base , Main Hall, Yanfusi.....	246
Figure 1.2a. Inscription on east middle <i>sanchuanfu</i> , Main Hall, Tianningsi.....	247
Figure 1.2b. Inscription on west middle <i>sanchuanfu</i> , Main Hall, Tianningsi.....	247
Figure 1.2c. Inscription on east front <i>sanchuanfu</i> , Main Hall, Tianningsi.....	247
Figure 1.2d. Inscription on central interior tie-beam, Main Hall, Tianningsi.....	247
Figure 1.2e. Plan, Main Hall, Tianningsi.....	248
Figure 1.2f. Front view of capital set, Main Hall, Tianningsi.....	249
Figure 1.2g. Sectional view of capital set, Main Hall, Tianningsi.....	249
Figure 1.2h. Rear view of capital set, Main Hall, Tianningsi.....	249
Figure 1.2i. Front view of intercolumnar set, Main Hall, Tianningsi.....	249
Figure 1.2j. Sectional view of intercolumnar set, Main Hall, Tianningsi.....	249
Figure 1.2k. Rear view of intercolumnar set, Main Hall, Tianningsi.....	249
Figure 1.2l. East-west sectional view, Main Hall, Tianningsi.....	250
Figure 1.2m. North-south sectional view, Main Hall, Tianningsi.....	250
Figure 1.2n. Column base, Main Hall, Tianningsi.....	250
Figure 1.3a. Plan, Main Hall, Zhenrusi.....	251
Figure 1.3b. Facade, Main Hall, Zhenrusi.....	251
Figure 1.3c. North-south sectional view, Main Hall, Zhenrusi.....	252
Figure 1.3d. North-south sectional view, Main Hall, Zhenrusi.....	252
Figure 1.3e. Picture of capital set on facade, Main Hall, Zhenrusi.....	253
Figure 1.3f. Sectional view of capital set, Main Hall, Zhenrusi.....	253

Figure 1.3g. Sectional view of intercolumnar set, Main Hall, Zhenrusi.....	253
Figure 1.4a. Plan, Ershanmen, Yunyansi.....	254
Figure 1.4b. Front view of capital set, Ershanmen, Yunyansi.....	255
Figure 1.4c. Sectional view of capital set, Ershanmen, Yunyansi.....	255
Figure 1.4d. Rear view of capital set, Ershanmen, Yunyansi.....	255
Figure 1.4e. Intercolumnar set, Ershanmen, Yunyansi.....	255
Figure 1.4f. Sectional view of intercolumnar set, Ershanmen, Yunyansi.....	255
Figure 1.4g. Rear view of intercolumnar set, Ershanmen, Yunyansi.....	255
Figure 1.4h. Capital block, Ershanmen, Yunyansi.....	255
Figure 1.4i. North-south sectional view, Ershanmen, Yunyansi.....	256
Figure 1.4j. <i>Zhaqian</i> , Ershanmen, Yunyansi.....	256
Figure 1.4k. Column base, Ershanmen, Yunyansi.....	256
Figure 1.4l. East-west sectional view, Ershanmen, Yunyansi.....	257
Figure 1.4m. <i>Jituan</i> , Ershanmen, Yunyansi.....	257
Figure 1.4n. Lattice ceiling, Ershanmen, Yunyansi.....	257
Figure 1.5a. Jileyuan, Jijian.....	258
Figure 1.5b. Column base of Jileyuan, Jijiansi.....	258
Figure 1.5c. <i>Zhuzhi</i> of Main Hall, Zhenrusi.....	258
Figure 1.5d. <i>Zhuzhi</i> of Main Hall, Tianningsi.....	258
Figure 1.5e. Column base of Main Hall, Yanfusi.....	258
Figure 1.5f. Doushuaigong, Jijiansi.....	258
Figure 1.5g. Xitiansi(the Stone Hall), Jijiansi.....	259
Figure 1.5h. Middle niche, Xitiansi, Jijiansi.....	259
Figure 1.5i. Column base, Xitiansi, Jijiansi.....	259
Figure 1.5j. <i>Zaojing</i> of the middle niche, Xitiansi, Jijiansi.....	259
Figure 1.5k. Plan of Xitiansi, Jijiansi (after Liu Xujie, 1979).....	260
Figure 1.5l. East-west sectional view showing three niches, Xitiansi, Jijiansi (after .Liu Xujie, 1979).....	260
Figure 1.5m. North-sourth sectional view of Xitiansi, Jijiansi (after Liu Xujie, 1979).....	260
Figure 1.5n. East-west sectional view showing front three bays, Xitiansi, Jijiansi (after Liu Xujie, 1979).....	260
Figure 1.6a. Plan of Main Hall, Xuanyuangong.....	261
Figure 1.6b. Base Type I, Main Hall, Xuanyuangong.....	261
Figure 1.6c. Base Type II, Main Hall, Xuanyuangong.....	261
Figure 1.6d. Sectional view of capital set, Main Hall of Xuanyuangong.....	262
Figure 1.6e. Rear view of capital set, Main Hall of Xuanyuangong.....	262
Figure 1.6f. Front view of capital set, Main Hall of Xuanyuangong.....	262
Figure 1.6g. Sectional view of intercolumnar set, Main Hall of Xuanyuangong.....	262
Figure 1.6h. Rear view of capital set, Main Hall of Xuanyuangong.....	262

Figure 1.6i. North-south sectional view of Main Hall, Xuanyuangong.....	263
Figure 2.1a. Plan of the Main Hall, Lifengguan.....	264
Figure 2.1b. The Front Elevation of the Main Hall, Lifengguan.....	265
Figure 2.1c. Bracket sets on the rear elevation, the Main Hall of Lifengguan.....	266
Figure 2.1d. Bracket sets on the side elevation, the Main Hall of Lifengguan.....	266
Figure 2.1e. Sectional view of the middle intercolumnar set on the facade, the Main Hall of Lifengguan.....	266
Figure 2.1f. Sectional view of the side intercolumnar set on the facade, the Main Hall of Lifengguan.....	266
Figure 2.1g. North-south Sectional View of the Main Hall, Lifengguan.....	267
Figure 2.2a. Layout of the Dongyuemiao Complex.....	267
Figure 2.2b. Plan of Feilaidian, Dongyuemiao.....	268
Figure 2.2c. Front Elevation of Feilaidian, Dongyuemiao.....	269
Figure 2.2d. East-west Sectional View of Feilaidian, Dongyuemiao.....	270
Figure 2.2e. Capital set of <i>waiyan puzuo</i> , Feilaidian, Dongyuemiao.....	271
Figure 2.2f. Intercolumnar set of <i>waiyan puzuo</i> , Feilaidian, Dongyuemiao.....	271
Figure 2.2g. <i>Shencaoneipuzuo</i> of Feilaidian, Dongyuemiao.....	271
Figure 2.2h. <i>Xiaomuzuo</i> of Feilaidian, Dongyuemiao.....	272
Figure 2.2i. Plan of Xiangdian, Dongyuemiao.....	273
Figure 2.2j. Frontal elevation of Xiangdian, Dongyuemiao.....	274
Figure 2.2k. East-west dectional view of Xiangdian, Dongyuemiao.....	275
Figure 2.2l. North-south dectional biew of Xiangdian, Dongyuemiao.....	275
Figure 2.2m. Sectional view of <i>waiyan puzuo</i> of Xiangdian, Dongyuemiao.....	275
Figure 2.2n. <i>Shencaonei puzuo</i> of Xiangdian, Dongyuemiao.....	275
Figure 2.2o. East-west sectional view, Xiangdian, Dongyuemiao.....	276
Figure 2.3a. Plan of the Main Hall, Bao'ensi.....	277
Figure 2.3b. Photographs of the Main Hall, Bao'ensi.....	278
Figure 2.3c. Capital Set of <i>waiyan puzuo</i> , Main Hall, Bao'ensi.....	279
Figure 2.3d. Intercolumnar set of <i>waiyan puzuo</i> , Main Hall, Bao'ensi.....	279
Figure 2.3e. Fan-shaped intercolumnar set of <i>waiyan puzuo</i> , Main Hall, Bao'ensi.....	279
Figure 2.3f. Corner bracket set of <i>waiyan puzuo</i> , Main Hall, Bao'ensi.....	279
Figure 2.3g. Sketch of the north-south section, Main Hall, Bao'ensi.....	280
Figure 2.4a. Layout of Yong'ansi.....	281
Figure 2.4b. Vestige of the ink inscription on the beam in the Main Hall of Yong'ansi.....	282
Figure 2.4c. Plan of the Main Hall, Yong'ansi.....	282
Figure 2.4d. Front elevation of the Main Hall of Yong'ansi.....	283
Figure 2.4e Capital sets and intercolumnar sets in the <i>mingjian</i> on the facade, Main Hall, Yong'ansi.....	284
Figure 2.4f. Capital set, Main Hall, Yong'ansi.....	284

Figure 2.4g. Sectional view of the capital set, Main Hall, Yong'ansi.....	284
Figure 2.4h. Bracket sets between <i>shunshenchuan</i> and <i>xiapingtuan</i> , Main Hall, Yong'ansi.....	284
Figure 2.4i. North-south sectional view of the Main Hall, Yong'ansi.....	285
Figure 2.5a. Plan of Wenchangdian, Wulongmiao.....	286
Figure 2.5b. Facade of Wenchangdian, Wulongmiao.....	287
Figure 2.5c. Enlarged picture of <i>pupaifang</i> , Wenchangdian, Wulongmiao.....	287
Figure 2.5d. Corner set, Wenchangdian, Wulongmiao.....	288
Figure 2.5e. Rear view of the intercolumnar set, Wenchangdian, Wulongmiao.....	288
Figure 2.5f. Front view and bottom view of the corner set, Wenchangdian, Wulongmiao.....	288
Figure 2.5g. Front view and bottom view of the intercolumnar set, Wenchangdian, Wulongmiao.....	288
Figure 2.5h. Sectional, front and bottom view of the corner set, Wenchangdian, Wulongmiao.....	288
Figure 2.5i. Picture of the capital set, Wenchangdian, Wulongmiao.....	288
Figure 2.5j. Sectional view and picture of the capital set on the east side, Wenchangdian, Wulongmiao.....	288
Figure 2.5k. North-south sectional view of Wenchangdian, Wulongmiao.....	289
Figure 2.5l. Front view of <i>shunshenchuan</i> , Wenchangdian, Wulongmiao.....	289
Figure 2.6a. Plan of the Main Hall, Qinglongsi.....	290
Figure 2.6b. Front elevation of the Main Hall of Qinglongsi.....	291
Figure 2.6c. Intercolumnar sets in the <i>mingjian</i> , Main Hall, Qinglongsi.....	292
Figure 2.6d. Corner set and intercolumnar set in the <i>cijian</i> , Main Hall, Qinglongsi...	292
Figure 2.6e. Sectional view of the middle intercolumnar set in the <i>mingjian</i> , Main Hall, Qinglongsi.....	292
Figure 2.6f. Picture of the capital set on the facade, Main Hall, Qinglongsi.....	292
Figure 2.6g. Sectional view of the capital set on the facade, Main Hall, Qinglongsi...	292
Figure 2.6h. Sectional view of the capital set on the rear side, Main Hall, Qinglongsi..	292
Figure 2.6i. North-south sectional view of the Main Hall, Qinglongsi.....	293
Figure 2.6j. East-west sectional view of the Main Hall, Qinglongsi.....	294
Figure 2.7a. Layout of Jianghouci, Lushan, Sichuan.....	295
Figure 2.7b. Front elevation of Pingxianglou, Lushan.....	296
Figure 2.7c. Picture of the front elevation of Pingxianglou, Lushan.....	296
Figure 2.7d. Plan of the ground floor, Pingxianglou, Lushan.....	297
Figure 2.7e. Picture of a capital set, Pingxianglou.....	298
Figure 2.7f. Picture of an intercolumnar set and a capital set from inside, Pingxianglou.....	298
Figure 2.7g. Picture of an intercolumnar set, Pingxianglou.....	298

Figure 2.7h. Sectional view of a capital set, Pingxianglou.....	298
Figure 2.7i. Sectional view of an intercolumnar set, Pingxianglou.....	298
Figure 2.7j. North-south sectional view of Pingxianglou.....	299
Figure 2.7k. East-west sectional view of Pingxianglou.....	300
Figure 2.7l. Balcony, Pingxianglou.....	300
Figure 2.7m. <i>Shunshenchuan</i> and the bracket set atop, Pingxianglou.....	300
Figure 2.7n. Two-rafter beam connecting the interior column to the eave column of the side, Pingxianglou.....	300
Figure 2.7o. Curved traversal tie beam and the bracket set atop, Pingxianglou.....	300
Figure 2.8a. Layout of Qiqushan Damiao, Zitong.....	301
Figure 2.8b. Plan of Pantuoshidian, Qiqushan Damiao.....	302
Figure 2.8c. Front elevation of Pantuoshidian, Qiqushan damiao.....	303
Figure 2.8d. Bottom view of the intercolumnar set on the facade, Pantuoshidian, Qiqushan Damiao.....	304
Figure 2.8e. Back view of the intercolumnar set on the facade, Pantuoshidian, Qiqushan Damiao.....	304
Figure 2.8f. Sectional view of the capital set on the side, Pantuoshidian, Qiqushan damiao.....	304
Figure 2.8g. Bracket sets of Pantuoshidian, Qiqushan damiao.....	304
Figure 2.8h. North-south sectional view of Pantuoshidian, Qiqushan damiao.....	305
Figure 2.8i. East-west sectional view of Pantuoshidian, Qiqushan damiao.....	305
Figure 2.8j. Layout of Guandimiao, Qiqushan damiao.....	306
Figure 2.8k. Plan of the Main Hall of Guandimiao, Qiqushan damiao.....	306
Figure 2.8l. Facade of the Main Hall, Guandimiao, Qiqushan damiao.....	307
Figure 2.8m. Corner set, Main Hall of Guandimiao, Qiqushan damiao.....	308
Figure 2.8n. Capital set, the Main Hall of Guandimiao, Qiqushan damiao.....	308
Figure 2.8o. Front view of the intercolumnar set, Main Hall of Guandimiao, Qiqushan damiao.....	308
Figure 2.8p. Sectional view of the intercolumnar set, Main Hall of Guandimiao, Qiqushan damiao.....	308
Figure 2.8q. Front view of the capital set, Main Hall of Guandimiao, Qiqushan damiao.....	308
Figure 2.8r. Sectional view of the capital set, Main Hall of Guandimiao, Qiqushan damiao.....	308
Figure 2.8s. East-west sectional view, Main Hall of Guangdimiao, Qiqushan damiao.....	209
Figure 2.9a. Plan of Yong'anmiao.....	310
Figure 2.9b. Front elevation of Yong'anmiao.....	310
Figure 2.9c. Front and bottom view of the corner set, Yong'anmiao.....	311
Figure 2.9d. Front and bottom view of the capital set, Yong'anmiao.....	311

Figure 2.9e. Front and bottom view of the intercolumnar set, Yong'anmiao.....	311
Figure 2.9f. Sectional view of the capital set, Yong'anmiao.....	311
Figure 2.9g. Sectional view of the intercolumnar set, Yong'anmiao.....	311
Figure 2.9h. Picture of the capital and corner bracket sets, Yong'anmiao.....	311
Figure 2.9i. North-south sectional view of Yong'amiao.....	312
Figure 2.10a. Plan of the Main Hall, Dou-Kousi.....	313
Figure 2.10b. Facade of the Main Hall, Dou-Kousi.....	314
Figure 2.10c. Picture of the capital set, Main Hall, Dou-Kousi.....	315
Figure 2.10d. Picture of the rear view of the capital set, Main Hall, Dou-Kousi.....	315
Figure 2.10e. Front view of the capital set, Main Hall, Dou-Kousi.....	315
Figure 2.10f. Sectional view of the capital set, Main Hall, Dou-Kousi.....	315
Figure 2.10g. Wanfoge of Bao'ensi.....	316
Figure 2.10h. Color paintings on the components and the pointed bottom of the dwarf pillar, Main hall, Dou-Kousi.....	316
Figure 2.10i. East-west sectional view of the Main Hall, Dou-Kousi.....	317
Figure 2.11a. Photograph of the Main Hall, Dubaisi.....	318
Figure 2.11b. Plan of the Main Hall, Dubaisi.....	318
Figure 2.11c. Pictures of the roof structure of the Main Hall, Dubaisi.....	319
Figure 2.11d. Picture of the capital set and the intercolumnar set on the facade, the Main Hall, Dubaisi.....	320
Figure 2.11e. Picture of the rear view of intercolumnar set, the Main Hall, Dubaisi.....	320
Figure 2.11f. Picture of the rear view of the capital set, the Main Hall, Dubaisi.....	320
Figure 2.11g. Sectional view of the capital set, the Main Hall, Dubaisi.....	320
Figure 2.11h. Sectional view the intercolumnar set, the Main Hall, Dubaisi.....	320
Figure 3.1a. Squarish Building Plans in Jiangnan.....	321
Figure 3.1b. Rectangular Building Plan in Jiangnan.....	321
Figure 3.1c. Plan of the Main Hall of Baoguosi (1013).....	322
Figure 3.1d. Plan of the Main Hall of Baoshengsi (1073).....	322
Figure 3.1e. Squarish Building Plans of Type 1 in Sichuan.....	323
Figure 3.1f. Squarish Building Plans of Type 2 in Sichuan.....	323
Figure 3.1g. Rectangular Building Plans in Sichuan.....	323
Figure 3.1h. Plan of Feitian zangdian in Yunyansi.....	324
Figure 3.1i. <i>Jianzhuzao</i> in Sichuan.....	325
Figure 3.1j. <i>Yizhuzao</i> in Sichuan.....	325
Figure 3.1k. Plan of Feilaidian of Dongyuemiao(1327).....	325
Figure 3.2a. Layout of intercolumnar bracket sets in Jiangnan.....	326
Figure 3.2b. Layout of the Intercolumnar Bracket Sets in Sichuan.....	327
Figure 3.2c. Bracket sets of the Song Buildings in Jiangnan.....	328
Figure 3.2d. Bracket sets of the Yuan Buildings in Jiangnan.....	329

Figure 3.2e. Capital and Intercolumnar Bracket Sets in Sichuan.....	330
Figure 3.2f. Regulation about <i>fubigong</i> in <i>Yingzao fashi</i>	331
Figure 3.2g. <i>Fubigong</i> of Song Buildings in Jiangnan.....	332
Figure 3.2h. <i>Fubigong</i> of Yuan Buildings in Jiangnan.....	333
Figure 3.2i. Comparison of <i>fubigong</i> in Sichuan and in <i>Yingzao fashi</i>	334
Figure 3.2j. <i>Dancai</i> and <i>zucai huagong</i> in Song Buildings in Jiangnan.....	335
Figure 3.2k. <i>Huagong</i> of <i>zucai</i> or <i>dancai</i> of Yuan Buildings in Jiangnan.....	336
Figure 3.2l. <i>Xiegong</i> in Sichuan.....	337
Figure 3.2m. <i>Linggong</i> and <i>shuatou</i> of Song Buildings in Jiangnan.....	338
Figure 3.2n. Bracket sets of Yuan Buildings in Jiangnan.....	339
Figure 3.2o. <i>Angwei tiaowo</i> and <i>angting tiaowo</i> in Jiangnan.....	340
Figure 3.2p. <i>Angwei tiaowo</i> and <i>angting tiaowo</i> in Sichuan.....	341
Figure 3.2q. <i>Shang'ang</i> and <i>xuexie</i> in Jiangnan.....	342
Figure 3.2r. <i>Xuexie</i> in Sichuan.....	343
Figure 3.2s. <i>Jia'ang</i> in Jiangnan.....	344
Figure 3.2t. <i>Jia'ang</i> in Sichuan.....	345
Figure 3.2u. Bracket Sets in Tomb M1, Anbing Tombs (Photograph after <i>Huaying Anbingmu</i> , 2008).....	346
Figure 3.2v. <i>Xiegong</i> in Feitianzang.....	347
Figure 3.2w. <i>Ejiaodou</i> in Jiangnan.....	348
Figure 3.3a. North-south sectional view of buildings in Jiangnan.....	349
Figure 3.3b. Sectional views of the buildings in Sichuan.....	350
Figure 3.3c. Roof structure of an eight-rafter building according to the <i>Yingzao fashi</i> ..	351
Figure 3.3d. The Main Hall of Baoguosi.....	351
Figure 3.3e. The Main Hall of Baoshengsi.....	351
Figure 3.3f. Jingangdian of Tianningsi (Nantong)	351
Figure 3.3g. Yanzi xiangdian.....	351
Figure 3.3h. Type A-Buildings that follow the <i>Yingzao fashi</i> standard.....	352
Figure 3.3i. Type B-Buildings with less rafters	352
Figure 3.3j. Type C-Buildings of <i>jianzhuzao</i>	352
Figure 3.3k. Type D- Others.....	352
Figure 3.3l. Moon-shaped beams in Jiangnan.....	353
Figure 3.3m. Straight beams in Sichuan.....	354
Figure 3.3n. Illustration of <i>yueliang</i> in the <i>Yingzao fashi</i> (from <i>Liang Sicheng wenji</i> , <i>juan</i> 7, 438).....	356
Figure 3.3o. <i>Lan'e</i> in Jiangnan.....	357
Figure 3.3p. <i>Shuzhu</i> and <i>tuofeng</i> in Jiangnan.....	358
Figure 3.3q. <i>Shuzhu</i> and <i>tuofeng</i> in Sichuan.....	359
Figure 3.4a. <i>Zhuchu</i> in the <i>Yingzao fashi</i>	360

Figure 3.4b. <i>Zhuchu</i> in Jiangnan.....	360
Figure 3.4c. <i>Zhuchu</i> in Sichuan.....	361
Figure 3.4d. <i>Suozhu</i> in Jiangnan.....	362
Figure 4.1a. Layout of Zhuanyundian and the small copper hall at Wudang Mountains (by Zhang Jianwei).....	363
Figure 4.1b. Facade of the small copper hall at Wudang Mountains (by Zhang Jianwei).....	363
Figure 4.1c. North-south sectional view of the small copper hall at Wudang Mountains(by Zhang Jianwei).....	364
Figure 4.1d. East-west sectional view of the small copper hall at Wudang Mountains (by Zhang Jianwei).....	364
Figure 4.1e. Tianyizhenqinggong, Wudangshan (after <i>Hubei gudai jianzhu</i>).....	365
Figure 4.1f. Outer building of Tianyizhenqinggong.....	366
Figure 4.1g. <i>Yueliang</i> and <i>shunfuchuan</i> of Tianyizhenqinggong.....	366
Figure 4.1h. <i>Chandu chuomu</i> of Tianyizhenqinggong.....	366
Figure 4.1i. Bracket sets of Tianyizhenqinggong.....	367
Figure 4.1j. Intercolumnar set of Main Hall of Qinglongsi.....	367
Figure 4.1k. Bracket set of Yong'anmiao.....	367
Figure 4.1l. <i>Xiaoshidian</i> at Wudangshan.....	368
Figure 4.1m. The Gate House of Lexutang, Hongcun, Anhui (1403).....	369
Figure 4.2a. Squarish plan of Yuan buildings in Shanxi.....	370
Figure 4.2b. Rectangle plan of Yuan buildings in Shanxi.....	371
Figure 4.2c. <i>Jianzhuzao</i> and <i>yizhuzao</i> in Song and Jin architecture in Shanxi.....	372
Figure 4.2d. <i>Jianzhuzao</i> and <i>yizhuzao</i> in Yuan architecture in Shanxi.....	373
Figure 4.2e. <i>Xiegong</i> of Song, Jin and Yuan periods.....	374
Figure 4.2f. <i>Yatiao</i> in Shanxi.....	375
Figure 4.2g. <i>Yixinggong</i>	376
Figure 4.2h. Comparison of <i>chuantongshi</i> and <i>da'eshi</i>	377
Figure 4.2i. <i>Da'eshi</i> in Sichuan.....	378
Figure 4.2j. Four types of <i>chuantongshi</i> Yuan buildings in the north.....	379
Figure 4.2k. Five types of <i>da'eshi</i> Yuan buildings in the north.....	380
Figure 4.2l. Sectional view of the Main Halls of Guangjisi, Shoushengsi and Longtianmiao.....	381
Figure 4.2m. Simplification of the bracket sets in Sichuan.....	382

INTRODUCTION

The Yuan dynasty, which dates from 1271 to 1368, is often considered a transitional period in Chinese architectural history.¹ The word “transitional” has had two implications regarding Chinese architectural history: short-lived and less important. First, the Yuan dynasty, which only ruled less than a century, is a short-lived dynasty. Therefore, there was probably not enough time for a powerful dynastic style to be developed. Second, since the Yuan dynasty was ruled by the Mongols, whose culture and life style were mainly nomadic, the architectural system of Yuan has been thought to have been less impacted by the official Song building standards than that of other periods. Yet architectural remains and historical texts have verified the characteristics of the dynastic styles of Yuan’s predecessor Song and successor Ming to have been present in Yuan architecture. Moreover, Yuan architecture is important in its own right. With fewer restraints of a central bureaucracy, Yuan architects and artisans had more freedom than those of other dynasties to be innovative and creative. Furthermore, without official restrictions and interferences, regional style seized the opportunity to develop.

A dynastic history of Yuan architecture written by Pan Guxi was published in 2001, which includes city planning, palatial architecture, religious architecture, residential architecture, and the development of timber architecture technology.² Most examples of

¹ Steinhardt 1988, 58

² Pan Guxi, 2001. This book also includes a dynastic history of Ming architecture.

the Yuan timber buildings in this book are located in the north provinces, such as Shanxi, Shaanxi, Hebei and Henan along the Yellow River. Some of the Yuan buildings in the north were also published in Zhang Yuhuan's article on the typological problem of Yuan timber buildings in Shanxi in 1979.³ Zhang's article has provided a generally accepted method for identifying a Yuan building and explaining its structure. Northern Yuan monuments in Shanxi and elsewhere are fairly well published.

On the other hand, Yuan buildings in the south are along the Yangtze River⁴, have somehow been overlooked. Although Pan Guxi includes a few examples of Yuan timber buildings in Jiangnan and Sichuan in his book, he did not highlight the differences among different regions, especially regarding Yuan architecture in the middle or upper Yangtze River reaches. His omission is probably due to the scarce remains of Yuan architecture in the south. Fewer than twenty buildings in south China are reliably dated to the Yuan period. No serious publication has introduced or analyzed the regional styles of the Yuan period even though this issue is essential to understanding architectural history of China. Yuan architecture in the south represents a style that heretofore has been considered incidental to Chinese architectural history. This dissertation will prove otherwise. For the purpose of a comprehensive knowledge of Yuan architecture, a study of Yuan architecture

³ Zhang Yuhuan, 1979

⁴ As a peer of the Yellow River in the civilization of China, the Yangtze River has been of crucial importance to China from the Warring States period until today. It also represents a different civilization from that of the Yellow River. Generally speaking, Yangtze River has often been considered the symbol of "southern" China while the Yellow is called the "cradle" of "northern" China.

in south China begins here.

In terms of Yuan buildings in the south, remains in the Sichuan and Jiangnan areas are very significant: Sichuan, situated at the upper reaches of the Yangtze River, and Jiangnan, situated at the lower reaches of the Yangtze River, contain more than 80% of the Yuan buildings in the south, a total of sixteen. The middle reaches of the Yangzi River, which includes Hubei, Jiangxi and Anhui provinces, contain few Yuan timber buildings but some non-timber buildings of extreme importance. By studying the Yuan buildings from all these regions, the emerging field of Yuan architecture along the Yangtze River is introduced.

This thesis deals with all known Yuan timber buildings and several non-timber buildings along the Yangtze river, from Sichuan and Chongqing to Hubei, Anhui, Jiangsu, Shanghai and Zhejiang provinces, which is discussed here for the first time. It will also include some Song buildings of the early thirteenth century and some early Ming buildings of the late fourteenth century when necessary. Through this research, the author attempts to introduce most of the important Yuan buildings in the south and try to find out how they differ and resemble one another, how they are distinct from contemporary buildings in the north, and how they can help us understand the transformation of architecture from Song to Ming.

Previous Scholarship

Modern research and fieldwork on Yuan buildings in Jiangnan can be dated to early in the 1930s when the Society for Research in Chinese Architecture (*Zhongguo yingzao xueshe* 中國營造學社) was still active. In 1936, Liu Dunzhen, a member of the Society, published a general survey of historical architecture in Suzhou in an issue of *Zhongguo yingzao xueshe hui kan* 中國營造學社會刊 (Bulletin of the Society for Research in Chinese Architecture). A section in this article concerns Ershanmen (Second Gate) of Yunyansi 雲岩寺 at Huqiu 虎丘 (Tiger Hill), and for the first time, its gate is dated to 1338. Although Liu's writing about the Yunyansi building is concise, it is clear enough to understand the structure and features of this building, and an added benefit is the rare pictures taken during the 1930s.

The main hall of Zhenrusi 真如寺 is the second Yuan building that has attracted scholars' attention. Liu Dunzhen wrote an article about the main hall of Zhenrusi in a 1951 issue of *Wenwu*.⁵ By telling how the building came to notice, Liu wrote that in August 1950, a Yuan inscription was found on an architectural member of the main hall of Zhenrusi by an official in Shanghai, and then Liu was invited to measure the building. After doing some fieldwork on this building, Liu Dunzhen demonstrated that the main structure of the hall in Zhenrusi was constructed during the mid-Yuan period with some restorations during the Ming and Qing dynasties. In this article, Liu briefly introduced the

⁵ Liu Dunzhen 1951, 91

history of the monastery, discussed the problem of the building's age and analyzed the timber structure in detail.

Another article regarding the main hall of Zhenrusi was published in a *Wenwu* issue of 1966.⁶ It is unclear who the author of this article is, since it is attributed to Shangaishhi wenwu baoguan weiyuanhui上海市文物保管委員會 (The Committee of Cultural Relic Preservation in Shanghai). This information reminds us, however, that at that time the main hall of Zhenrusi had been supervised and preserved under a special bureau.

A later article on Zhenrusi suggests that the main hall was in a very poor condition in 1961. Therefore, a project to restore the building was carried out in 1963 and was completed in 1964. During the restoration, many inscriptions on the architectural members were uncovered, further proving that the structure of the building was authentically a Yuan piece of work. Moreover, these inscriptions also help us to understand the whole timber structure and the terminology of Yuan architecture.

The earliest publication on Tianningsi天寧寺 was written by Chen Congzhou陳從周 in 1954 and also published in *Wenwu*. According to this article, Chen Congzhou was invited to Jinhua金華 to survey Tianningsi in 1954 because the local administrative fellows suspected that the main hall might be a Yuan building. Thereupon, Chen studied the history of Tianningsi, carefully measured the structure and speculated that that the

⁶ Shanghai shi wenwu baoguan weiyuanhui 上海市文物保管委員會 1966, 16

main hall was probably dated to Yuan. His speculation was confirmed by the discovery of a Yuan inscription that is written on a beam of the main hall.⁷ A short announcement in a *Wenwu* issue published in 1955 also remarks on the discovery of the Tianningsi building and its date of Yuan.⁸

Another significant first-hand resource on the Tianningsi hall is published in a collection of archaeology reports by Zhejiangsheng wenwu kaogu suo浙江省文物考古所(The Institute of Cultural Relics and Archaeology of Zhejiang Province) in 1981.⁹ Compared to Chen Congzhou's article in 1954, this study has a more detailed description of the timber structure and provides more diagrams and charts which inform about the dimensions of the structural members. Furthermore, it records the alterations that were made under the restoration project in 1980 by telling us which part of the building was repaired, what was newly installed and what was uninstalled because of its conflicts with the authenticity of Yuan structure.

In 1954, the same year when Chen Congzhou published his article on Tianningsi, he wrote another article for *Wenwu* about the main hall of Xuanyuangong, a small temple located on a peninsula deep in the Taihu Lake. After studying historical gazetteers of Taihu and Suzhou, he compiled a brief history of the temple and dated the building to late Yuan. Chen's article also contains some dimensions of the building and measured

⁷ Chen Congzhou 1954,101

⁸ *Wenwu*, 1955, 159

⁹ Zhejiang sheng wenwu kaogu suo wenbao shi 浙江省文物考古所文保室 1981, 176-183

diagrams of the plan and bracket sets.

According to Tao Baocheng's article printed in 2001, the building of Xuanyuangong was repaired in 1956, 1975 and 1988, respectively, though threats caused by termite and decay of lumber had never been completely eliminated. Thus another preservation project took place in 2001 when the timber members were infused with a few types of chemically modified natural resins.¹⁰

The main hall of Yanfusi 延福寺, although the oldest Yuan building hitherto discovered in Jiangnan, was studied later than the buildings discussed above. The main hall of Yanfusi was first mentioned in Chen Congzhou's article about Tianningsi published in 1954.¹¹ Chen briefly stated that the main hall of Yanfusi was one of the Yuan buildings in Jiangnan and was dated to 1326. When Chen wrote an article about the Yanfusi building during the 1960s, however, he adjusted the date from 1326 to 1317, based on the inscription found on a stele in the monastery.¹²

The main hall of Yanfusi, as a Yuan timber building, was known to scholars as early as the 1950s, but serious investigation of this building had not been carried out until Chen Congzhou surveyed and measured it in person in 1963. With regard to Yanfusi, the 1966 *Wenwu* article is the only available first-hand resource which informs us about the history of the monastery and details of the architecture. Moreover, contrasting other Yuan

¹⁰ Tao Baocheng 2001, 95-96

¹¹ Chen Congzhou 1954, 107

¹² Chen Congzhou 1966, 32

buildings in Jiangnan, such as the main halls of Zhenrusi, Tianningsi and Xuanyuangong, the Yanfusi building has never been restored since its discovery by modern scholars. This may be able to explain why the Yanfusi building is under-attended compared to the other Yuan buildings.

Some stone structures dated to Yuan were found two decades ago in Jiangnan. The only monographic article regarding the stone halls in Jijiansi is written by Liu Xujie and Qi Deyao, published in 1980 in a book of collected works.¹³

Most publications introduced above are monographs based on first-hand resources and on-site fieldwork. More than half of them are published before 1966, before the Cultural Revolution (1966-1976) when academic activities were forced to cease (Table 2). On the basis of pre-Cultural Revolution publications, academic research on these Yuan buildings has picked up since the 1980s and these individual buildings have been studied in a broad context afterward. In *Zhongguo g u jianzhu j ishushi* 中國古建築技術史 (History and Development of Ancient Chinese Architecture Techniques), a major publication on Chinese architectural history in 1986, the author includes the main halls of Zhenrusi and Yanfusi to exemplify the features of a small Buddhist hall of the Yuan dynasty.¹⁴ In another book, *Zhongguo gudai j ianzhushi* 中國古代建築史 (History of Chinese Ancient Architecture), the main halls of Yanfusi, Tianningsi and Zhenrusi are

¹³ Liu Xujie and Qi Deyao 1979, 44-47

¹⁴ Zhang Yuhuan 1986, 115-119

included to represent the style of Yuan timber Buddhist halls in the Jiangnan area.¹⁵

Recent outstanding research on Yuan buildings in Jiangnan should be attributed to the contemporary scholar Zhang Shiqing. In his book, *Zhongguo Jiangnan Chanzong siyuan jianzhu* 中國江南禪宗寺院建築 (Architecture of Chan Buddhist Temple in Jiangnan, China), he compares these Yuan buildings to both Song architecture in Jiangnan and buildings in Japan known in a style known as *karayō* 唐樣 from many aspects—the scale, the worship space, the bracket sets, the roof structure, decorative carpentry, etc. With regard to the features of timber structure, using his own theory, Zhang Shiqing analyzes the relations and influences between the styles of the Song and Yuan, the north and the south, and the Chinese and Japanese.

Among the Yuan buildings in Sichuan, only a few have been studied. For example, Pan Guxi briefly mentioned Feilaidian 飛來殿 of Dongyuemiao 東嶽廟¹⁶ and the Main Hall of Qinglongsi 青龍寺¹⁷ in his book on Yuan architecture. Two articles about the architecture in Qiqushan damiao 七曲山大廟 are published in *Sichuan wenwu* 四川文物, in 1984¹⁸ and 1991.¹⁹ Two articles are published about the Main Hall of Yong'ansi 永安寺: one in *Wenwu* 文物 in 1955 and one in *Sichuan wenwu* in 1991. The 1955 article has the only record about the wall paintings in the Main Hall of Yong'ansi, which was

¹⁵ Pan Guxi 2001, 208-310

¹⁶ Ibid., 366

¹⁷ Pan Guxi 2001, 435

¹⁸ Li Xianwen, 1984

¹⁹ Yao Guangpu, 1991

destroyed during the 1960s.

For the other buildings, although some are recorded in internal documents of local administrative bureaus, such as the buildings at Lifengguan 禮峰觀, Yong'anmiao 永安廟, Dou-Kousi 豆叩寺 and Dubaisi 獨柏寺, and others are merely touched upon in publications of the Sichuan Provincial Cultural Heritage Bureau with less than a one-page description and no pictures or diagrams, such as the buildings of Wulongmiao 五龍廟 and Bao'ensi 報恩寺, generally speaking, publications on these Yuan and Ming buildings have hitherto been scarce, and the historical values of the buildings has not been fully understood. They are not even the subjects of one monographic article. Therefore, a major contribution of this thesis is to present Yuan architecture in Sichuan and Chongqing and place the buildings into a systematic study of architecture history.

Methodology

This dissertation consists of two parts: case studies of Yuan architecture along the Yangtze River and comparative studies of architecture among different regions in China.

In the case studies, the author will elaborate the construction history, religious functions, and structure of each building, along with the monastery where it is located, if applicable, based on both textual and physical evidences. Textual evidence includes gazetteers that record the history of the building or the monastery, and applicable

inscriptions on stele; architectural members are the main physical evidence. In addition, I have measured, drawn and photographed every buildings.²⁰

In the comparative studies, those Yuan buildings will be *deconstructed*. Those timber buildings are analyzed in the sequence of plans, configuration of bracket sets, styles of roof structures, decoration features, and important timber structural members. The purpose is to find out possible regional style and transformation through time.

Finally yet importantly, history of architecture is also a reflection of religious, social, and political history. In order to explain the architectural transformation, the author will try to deduce the reason for specific styles and features through historical or social phenomena.

Dissertation Structure

The first two chapters of the dissertation are case studies. The purpose of Chapter 1 is to investigate one stone and five timber halls built during the Yuan period in the Jiangnan area of southeast China. The buildings are discussed in separate sections according to chronological sequence. This chapter reveals that the architectural style of

²⁰ Unless otherwise noted, the pictures of Yuan architecture in Jiangnan and Sichuan are taken by the author herself. The line drawings that display plans, facades, sectional views, and enlarged details of the architecture are also my own if not noted. Most measured line drawings are reproduced by the author using Computer Aided Design (CAD) software based on drawings provided by the administrators of respective buildings. Some of early drawings were produced decades ago and others are flawed. Therefore, the drawings are corrected whenever necessary on the computer, and the measurements of these buildings in the drawings are believed to be accurate. For some line drawings, if there is no scale, it is only a sketch instead of a *measured* drawing and it merely indicates the composition of the members, not the real measurement.

Southern Song greatly influenced the Yuan buildings in Jiangnan. Since communication between Southern Song and Japan was active during the Kamakura and Muromachi periods, the features of the Yuan buildings in Jiangnan are also reflected in contemporary Japanese buildings.

Chapter 2 deals with thirteen buildings in Sichuan and Chongqing that predate the year 1400 and heretofore have been unknown. Sichuan and Chongqing belong to the Sichuan Basin area and are isolated by its surrounding mountains and guarded by the Three Gorges. Such a relatively independent geographical environment enables its architecture to be a somewhat self-contained regional style. Five of the buildings can be dated to exact years of the Yuan dynasty and another four should be considered Yuan monuments based on their architectural style, but do not have precise ages because of a dearth of related evidence through which to assess them. Four buildings dated to early Ming are included in this chapter, among which only Xiangdian of Dongyuemiao has an exact date. The reasoning behind my dating of each building will be elaborated in each section.

Chapter 3 and Chapter 4 explore the analytical problems of various regional styles of architecture in the Yuan dynasty. The building examples in part one will be incorporated into discussions with other resources.

The architectural features of Jiangnan and Sichuan buildings that have been

discussed in previous chapters will be summarized in Chapter 3, on the basis of plans, bracket sets, roof structures and decorative details, in that order, followed by analysis of their similarities and dissimilarities. By rearranging the buildings in structural sequence, it is possible to find out whether the Jiangnan and Sichuan areas have apparent regional styles during the Yuan period. Then the question whether these two regional styles, if they exist, are independent or related will be answered.

The first two sections of Chapter 4 involve Yuan and early Ming buildings in the areas other than Jiangnan and Sichuan. The architecture, both timber and non-timber, in the area along the middle Yangtze River, which includes Hubei and Anhui provinces, will be introduced. The middle reaches of the Yangtze River is defined within Hubei, Jiangxi and Anhui provinces in my thesis. The author will also explain how the Yuan architecture along the middle Yangtze River relates to the contemporary architecture in Sichuan and Jiangnan.

Relatively speaking, Yuan architecture in north China has been comprehensively studied and surveyed during recent decades. Hundreds of Yuan timber buildings have been discovered in Hebei, Shanxi and Shaanxi provinces. In the third section, I shall compare the Yuan architecture in the north to that in Jiangnan and Sichuan. In addition to Yuan architecture, I will also discuss important timber buildings in the north that were dated to the Song, Liao or Jin periods when necessary. The study also includes

comparison of construction history, design theories, and artisanship between northern Yuan buildings and the southern Yuan buildings in Jiangnan and Sichuan, respectively.

We begin with the individual Yuan buildings in Jiangnan.

CHAPTER ONE

YUAN BUILDINGS IN JIANGNAN: JIANGSU, SHANGHAI AND ZHEJIANG

“Jiangnan” is not only a geographical term but also represents a specific culture of China historically and today. According to the entry for “Jiangnan” in *Hanyu dacidian* 漢語大詞典 (The Great Chinese Dictionary), the modern meaning of “Jiangnan” in a broad sense refers to the whole territory south to the Yangtze River. However, in a narrow sense, “Jiangnan” culturally means the area of Zhejiang, south Jiangsu and Anhui provinces, and the metropolis Shanghai.²¹ Topographically, the narrow sense of Jiangnan in present day is the region southeast to the lower Yangtze River (Map 1). In this study, the term *Jiangnan* refers to the latter definition provided by *Hanyu dacidian*.

During the Southern Song dynasty, the narrow sense Jiangnan was composed of three *lu*²²—West Liangzhe Lu 兩浙西路, East Liangzhe Lu 兩浙東路, and East Jiangnan Lu 江南東路 (Map 2). Lin'an 臨安, present day Hangzhou and the capital city of Southern Song, is located at the very center of this area. In the beginning of the Yuan dynasty, these three *lu* were incorporated into one *xingsheng* 行省, a Yuan province, called Jianghuai Xingsheng 江淮行省 (Map 3). Comparing Map 1 with Map 3, we find that the territory of Jianghai province of Yuan in 1280 is almost the same as the narrow sense Jiangnan described in the modern dictionary, *Hanyu dacidian*, which probably suggests that since the early period of Yuan, the central government had been aware of

²¹ *Hanyu da cidian* 1997, 3124

²² *Lu* 路 is the name for a Southern Song province.

the integrity of today's narrow sense Jiangnan, and they planned to manage this area as one province instead of three, as did the Southern Song.²³ Therefore, the Yuan structures remaining in this area must bear some regional features, and, if possible, interact with each other.

The monuments investigated in this chapter include all discovered Yuan buildings within the Jianghuai province of the Yuan dynasty, which is equivalent to the modern Jiangnan in the narrow sense. Zhenrusi 真如寺 is located in the metropolitan area of Shanghai. Tianningsi 天寧寺 and Yanfusi 延福寺 are in the middle of Zhejiang province. Yunyansi 雲岩寺, Xuanyuangong 軒轅宮 and Jijiansi 寂鑒寺 are situated at the suburban area of Suzhou. These monuments, listed in Table 1, all remain in good condition (see Map 4 and Table 1).

1. Yanfusi 延福寺

Yanfusi is located at a remote village known as Taoxi 桃溪 in Wuyi county 武義縣 of Jinhua 金華 area that is in the middle of present Zhejiang province. Taoxi belonged to a county named Xuanping 宣平 until 1958 when Xuanping was abolished and ascribed to another county, Wuyi. There are five versions of *Xuanping xianzhi* 宣平縣誌 (Gazetteer of Xuanping County) available today: one written in Ming, three written in Qing and

²³ In later Yuan, Jianghuai Xingsheng is renamed Jiangzhe Xingsheng 江浙行省, added by the area corresponding to modern Fujian. It is quite interesting that although Jiangnan has been widely recognized as a significant area of culture, it has never been plotted as one province ever after Yuan.

one dated from Minguo民國(the Republican Period). Among these gazetteers, the one from the Qing dynasty in 1878, the fourth year of Guangxu光緒 period, has the best quality.²⁴ The section on Yanfusi is included in *juan* nine and reads:

Yanfusi is 25 *li* to the north of the county seat and was (first) built in the second year of Tianfu period of Jin (937) by monk Zongyi. During the Tianshun period of Ming, monk Jianqing restored the monastery. The rear hall, Guanyin Pavilion and two corridors were rebuilt by monk Zhaoying in the ninth year of Kangxi period (1670). During the eighth year of Yongzheng period (1730) and the thirteenth year of Qianlong period(1748), monk Tongmao and his apprentice Dingming repaired the main hall several times and established the Hall of Heavenly Kings and twenty-one chambers of bays on the two corridors. They also decorated and sculpted four golden statues of the Heavenly Kings. Because of this, the power of Buddha was caused to prosper. There once were six scenic spots: Emerald Screen Mountain, Five Willows Creek, Hanging Musical Stone, Wooden Fish Mountain and Stony Brook Well. In the eighteenth year of Daoguang period (1838), the abbot Hanshu rebuilt the main gate. Abbot Miaoxian supervised another restoration in the fourth year of Tongzhi period (1865).

延福寺在縣北二十五裡，晉天福二年僧宗一建。明天順年間僧潤清重修。康熙九年，僧照應重建後殿、觀音殿、兩廊。雍正八年至乾隆十三年，僧通茂同徒定明屢次修整大殿，創興天王寶殿並兩廊廂屋二十一間。裝塑天王金身四尊，由是獅林大振。舊有六景，翠屏山、五柳溪、懸磬巖、木魚山、石澗井。道光十八年，主持僧漢書重建山門，同治四年主持僧妙顯重修。²⁵

²⁴ *Xuanping xianzhi*, *juan* 9

²⁵ A passage written by a Ming fellow villager, Tao Mengduan 陶孟端, is also recorded as a note of the main entry, and it reads,

(Yanfusi) is about twenty *li* from the county seat. It is surrounded by mountains and brooks. It was called Futian in the second year of Tiancheng period of Tang (927). During the Shaoxi period of Song, it was given its current name. At that time, Master Shouyi from Zixuan Sect was authorized to construct (the monastery) and the construction was roughly done. The (main) hall was not built until Yuan when Rishi and Dehuan had purchased land and reestablished the stele. Monk Zongpu and Weiqian maintained the buildings one by one and their apprentices, Wenbi and Jianqing, were busy cultivating the land. Their stockpile began to accumulate. An uprising broke out during the Zhengtong period (1435-1443) of Ming. Bandits destroyed the buildings and used the wood as fuel. The monastery was not renewed until Jiajing period(1521-1535). Wenbi and his fellow monks cultivated the land all by their hearts. All kinds of work were quickly done and the demolished buildings were rebuilt. They also bought more fertile land. During the spring of the Guiwei year of Tianshun(1463), monk Jianqing asked me to write a memoir on stone. Therefore I recorded their reviving work.

距邑二十裡許，峰環澗繞，寺立其中。唐天成二年名曰福田，宋紹熙賜今名。有賜紫宣教太師守一休菴苟完。迨元有堂，日師及德環等，繼置田山，重立碑記。僧宗普惟謙相繼葺理，

According to the gazetteers and a Yuan stele found in the monastery,²⁶ Yanfusi was first established in 937 of the Later Jin後晉, called Futian福田, and was renamed Yanfu 延福 during the Song. It was not until 1317 that the main hall was built, and at the same time the abbot expanded the monastic properties. The main hall was restored once during the Ming dynasty and several times during the Qing dynasty, but it is never recorded as being “torn down” or “reconstructed” since Yuan. Except for the textual evidence recorded in the gazetteers and the stele inscription, the reason why the main hall is generally dated from 1317 is that a family name, Zheng, which was mentioned as the donor of the main hall in the 1324 inscription,²⁷ is also found in an inscription on a

其徒文碧澗清耕作惟勤，積累稍稔。明正統間鄉寇騷發，毀宇為薪。迨靖復業，文碧等悉意生殖，諸工旋作，百廢俱舉，且購腴田。天順癸未仲春，澗清丐余志石條，其續置之業而記之。

²⁶ The inscription is known as Chongxiu Yanfuyuan beiji 重修延福院碑記(The Stele Inscription of the Reconstruction of Yuanfuyuan) and written by an intellectual, Liu Yan 劉演, in 1324. The text is partially recorded by Chen Congzhou in his article, (Chen Congzhou 1966,32) and it reads:

In the early Jiazi year of the Taiding period (1324), Master Dehuan visited me and said, “My grand master said, ‘You build the new based on the old. There is nothing left around. Only the main hall looks lofty. Then I think it could endure and there is no need to change it.’ As time passed by, the main hall suddenly decayed. My master then instructed his grandson Yongguang with deep emotion, ‘The main hall is a big project. If you do not take it as your priority, I will not take the leadership.’ Then they led a group of people with one purpose, expanded the old base and renewed the relic site. A fellow villager Zheng was touched by them and was willing to sponsor the project. In the Dingsi year of Yanyou period (1317), the sky circled and the earth gushed. The main hall was renewed brightly. They inherited the rules and gathered at the hall by hours. The sound of sutra reciting was clear as crystal and hand bells and musical stones were played occasionally. These sounds were brewed as wind of wine without difference in tones. Monks came from different places. People with no accommodations were all admitted.

泰定甲子初吉皆山師德環過餘曰：吾先太祖曰，公因舊謀新，四敞是備，獨正殿巋然，計可支久，故不改觀。歲月悠浸，遽復頽圯。先師祖梁慨然囑永廣孫曰，殿大役也，舍是不先，吾則不武。用率爾眾，一乃心力，廣其故基，新其遺址，意氣所感，裡人和甫鄭君亦樂助焉。延佑丁巳空翔地湧，粲然復興，繼承規禁，以時會堂。梵唄清樾，鐃磬間作，無有高下，釀為醇風，方來衲子，無食息之所者，鹹歸焉。

²⁷ See note 25.

two-rafter beam of the building.²⁸ This suggests that, at least, the structure on the same level as or below the two-rafter beam was not seriously changed after 1317; otherwise, the two-rafter beam bearing the inscription would not fit in where it is.

Although the plan of the monastic complex remaining today is based on a reconstruction in the Yuan period, except for the main hall, most buildings in Yanfusi such as *shanmen* 山門 (the main gate), *Tianwangdian* 天王殿 (the Hall of Heavenly Kings), *Guanyinge* 觀音閣 (the Pavilion of Avalokitesvara), and the side chambers, are dated to as late as the Qing dynasty.

The main hall we see today is a one-story hall and has a five-by-five-bay plan with double eaves. However this is not its original condition in the Yuan dynasty. The lower eave and the outermost ring of columns were added during later restorations. Since the purpose of this thesis is to discuss its Yuan features, I shall “reconstruct” the building on paper in its original way (fig.1.1a-f) and discuss the Yuan part exclusively.²⁹

The main hall is generally oriented north-south and its front entrance faces south (fig.1.1f). The building consists of two rings of columns, which forms a rectangle hall with three bays on each side. The *dangxinjian* 當心間 (the central bay on the facade) is 4.60 meters in width with two *cijian* 次間 (the bay next to *dangxinjian*) of 1.95 meters

²⁸ Chen Congzhou 1966, 34-35

²⁹ Chen Congzhou explained that the structure of the lower eave and the upper eave were dealt with in different ways and the proportions of the bracket sets also vary (Chen Congzhou, 1966,33). The main hall of Yanfusi is not the only example which has a later-added lower eave. The main halls of Zhenrusi and Tianningsi and even the Northern Song building at Baoguoqi 保國寺 of Ningbo were altered in the same way during the Ming and Qing periods. Chen believed that this might be a Ming-Qing tradition in Jiangnan. The lower eaves of the Zhenrusi and Tianningsi buildings were removed during the restorations of 1960s and 1980s.

wide. The middle bays on the sides are 3.70 meters wide with a front bay of 2.90 meters and a rear bay of two meters. Therefore, the dimensions of the plan are 8.5 by 8.6 meters, which is very close to a square. A C-shaped altar for Buddhist sculptures is installed in the center of the hall.

On both the façade and the side of the building, three intercolumnar bracket sets are installed on the *dangxinjian* or the middle bay and one intercolumnar set is installed on each *cijian*. According to the measurement of the bracket sets, the dimensions of the modular unit, *cai* 材, are 15.5 cm by 10 cm, which is very close to the ratio of 3 to 2 that is stipulated in the *Yingzao fashi*.

The capital set looks the same as the intercolumnar set from the outside (fig.1.1i). They all have one *huagong* 華拱 projected outward and two *ang* 昂 (inclined cantilever) installed in order to support the load of eave. The rear part of the bracket sets, however, varies due to different functions, which can be seen from the inside of the building. The capital set, which is integrated into the roof structure, have two *huagong* projected inward to support a three-rafter beam, *sanchuanfu* 三椽栿 (fig.1.1h). The lower *ang* of the capital set is truncated at the position above the column, and the tail of the upper *ang* extends to sustain the lower purlin, *xiapingtuan* 下平樑 (fig.1.1g).

On the other hand, the intercolumnar set has two *huagong* projected inward to support the tail of the lower *ang* that upholds a set of *chonggong* 重拱 (a double-tier

bracket arm, parallel to the elevation of a building and composed of a *mangong* 慢拱 placed above a *guazigong* 瓜子拱). The upper *ang* of the inter-columnar set is composed the same way as that of the capital set. Between the upper tier of the *huagong* and the tail of the lower *ang*, a wedge, known as *xuexie* 榑楔, is inserted to adjust the bevel between the *ang* and the *huagong* (fig.1.1j and fig.1.1k).

The roof structure of the building has eight rafters and nine purlins (fig.1.1l). The interior columns, *jinzhu* 金柱, are higher than the eave columns, based on which, the hall is defined a *tingtang*-style building. The three-rafter front bay is crossed by a *sanchuanfu*, which connects the eave column with one end and fastens the shaft of the interior column with the other end. A half bracket, known as *dingtougong* 丁頭拱 (a half *huagong* with its tenon at the rear mortised into a column, see fig.1.1m), is projected from the shaft of the interior column to bear the *sanchuanfu*. Above this member, the tail of the upper *ang* is inserted into a block to uphold the *xiapingtuan* 下平樑. Moreover, a *shuzhu* 蜀柱 (a dwarf pillar) stands on the *sanchuanfu* and upholds the *zhongpingtuan* 中平樑 (middle purlin) as well. Two highly curved diagonal beams, which cross a one-rafter span, called *zhaqian* 筈牽 (one-rafter beam), are built to connect the capital of the interior column, the capital of the king pillar and the tail of the *ang*. The structure of the rear bay is very similar to that of the front bay, except that it has no *shuzhu*. Moreover, since it has one rafter fewer than the front bay, only one *zhaqian* is installed.

The middle bay has two crescent beams: the lower one, a *sanchuanfu*, crosses the full span from one interior column to the other, and the top one, *pingliang*平梁(the upmost beam of a roof frame, two rafters in length), crosses a two-rafter span. One end of the *pingliang* is put on the capital of the interior column to prop up the *shangpingtuan*上平栳 (upper purlin) and the other end is supported by a bracket set built on the lower *sanchuanfu* to bear another *shangpingtuan*. Between this bracket set and the rear interior column, another highly curved and diagonal *zhaqian* is installed. On the *pingliang*, a bracket set instead of a *shuzhu* is built on the center to uphold the *jitian*脊栳 (ridge purlin, fig.1.11).³⁰ In addition, all the beams of the buildings, including *sanchuanfu*, *zhaqian* and *pingliang*, are made into *yueliang*月梁 (crescent beam).

It is noteworthy that the columns of the building are shuttle-shaped, which means they taper on both end, giving the appearance of entasis (fig.1.1o). These so-called *suozhu*梭柱 (tapered column on both sides), is one of the characteristics of the timber buildings in Jiangnan, especially for those buildings later than the Song dynasty.³¹ Moreover, the base under the front eave columns is different from the others. The plinth of the eave column is composed of a *fupen*覆盆 (an over-turned bowl) at the bottom, which is carved with high relief lotus, and of another block of stone at above(fig.1.1o), while the other column bases do not have the bottom part(fig.1.1p). Such decoration on

³⁰ According to Chen Congzhong, the structure above *pingliang* has been altered during the restorations after Yuan.

³¹ The *Yingzao fashi* only records a type of column that only has one tapered end. *Suozhu* is not discovered in north China among any post-Song timber buildings but lasts in the south even till the Ming dynasty.

the front eave column base stresses the importance of the front entrance, and the same design is also found in the Main Hall of Tianningsi 天寧寺 in Nantong 南通, Jiangsu province. The column bases of the building in Nantong are believed to be remaining from the Song dynasty.³²

The eave columns are tied by two lintels: *lan'e* 闌額 at the top and *you'e* 由額 (an associate column-tie) at the bottom (fig.1.1). The fact that *pupaifang* 普拍枋, a flat and column-top tie board, is not installed on the *lan'e*, resembles some other Song-Yuan buildings in Jiangnan, such as the main hall of Tianningsi (fig.1.2l), Ershanmen of Yunyansi (fig.1.4i) and the Main Hall of Baoguosi.³³

2. Tianningsi 天寧寺

Tianningsi is located on a hillside to the southeast of downtown Jinhua. A brief monastic history is recorded by the 1894 version of Jinhua xianzhi 金華縣誌 (Gazetteer of Jinhua County) and it reads:

Tianning Wanshou Zen Monastery is located at the northwest corner of the city and used to be called Dazangyuan. It was entitled Chengtian during the Dazhong Xiangfu reign period (1008-1016) of Song when it was first built. It was given its present name during the Zhenghe period (1111-1118). In the eighth year of Shaoxing period (1138), it was bestowed the name Bao'engguangsi in order to show respect to Emperor Huizong, and later was renamed Bao'engguangsi. The monastery was re-established during the

³² Chen Congzhou 1966, 33

³³ Baoguosi is located at Ningbo in Zhejiang province. The main hall of Baoguosi is dated to 1013, the sixth year of Dazhong xiangfu 大中祥符 reign period of the Northern Song. See more discussion on Baoguosi in later chapters.

Yanyou period of Yuan (1314-1320) and restored during the Zhengtong period of Ming. It was renamed Tianning Wanshousi at that time. It once had a stone pagoda. The Pavilion of Great Compassion (Dabeige) is behind the Main Hall.³⁴

天寧萬壽禪寺在城西北隅，舊名大藏院。宋大中祥符間建，賜號承天。政和更今名。紹興八年以崇奉徽宗，賜名報恩廣寺，又改報恩光寺。元延佑間重建，明正統時修，復名天寧萬壽寺。舊有石浮圖。登覽大殿，後有大悲閣。

Unfortunately, the complex of the monastery does not remain today. According to Chen Congzhou, when he did his fieldwork in Tianningsi in 1954, he still found some architecture reconstructed during the Qing period, such as the *shanmen* (the front gate), Tianwangdian 天王殿 (Hall of Heavenly Kings), and Dabeige 大悲閣 (Pavilion of the Great Compassion).³⁵ Nonetheless, when the local administrative office tried to restore the monastery in 1980, except for the main hall, no architecture had been left due to the demolition during the Cultural Revolution.³⁶

Reliable evidence that proves the accurate date of the main hall is found on the structure of the building. There is an inscription written on the east *sanchuanfu* of the *dangxinjian* and it reads:

Congratulations on the re-establishment (of the main hall) on the propitious Gengshen day of the sixth month of the Wuwu year, the fifth year of the Yanyou period of Yuan (1318).

大元延佑五年歲在戊午六月庚申吉旦重建，恭祝 (fig.1.2a)。

³⁴ Qian Renlong 錢人龍, *Jinghua xianzhi* 金華縣誌. Vol. 5. 1894 (the 20th year of Guangxu 光緒 period)

³⁵ Chen Congzhou 1954, 101

³⁶ Zhejiang sheng wenwu kaogu suo wenbao shi 浙江省文物考古所文保室 1981, 176

This piece of information, as well as other contemporaneous inscriptions written on other architectural members, directly demonstrates that in spite of later restorations, the current structure generally remains from 1318 (fig.1.2b-d). Moreover, the result of radiocarbon dating on some architectural members indicates that some timber pieces can be even dated to the Northern Song and Southern Song. They were uninstalled from the Song version building and re-installed into the Yuan building during the reconstruction of 1318.³⁷

The Main Hall of Tianningsi is roughly oriented north-south and its front entrance faces south (fig.1.2g). Its square plan is very similar to that of the Main Hall of Yanfusi. It consists of sixteen columns, which are arranged in two rings to form three bays on each side. The *dangxinjian* on the facade is 6.16 meters wide with two *cijians* of 3.28 meters in width. The middle bay on the side is 4.93 meters wide with a front bay of 4.65 meters and a rear bay of 3.14 meters. Therefore, the dimensions of the plan are 12.72 by 12.72 meters. It is very likely that an altar was once built in the center of the hall; however, we cannot find any trace of the original altar.

With regard to the bracket sets, the *dangxinjian* of the façade have three inter-columnar bracket sets and the *cijians* have only one. The bracket sets on the sides are designed differently: two inter-columnar sets are installed in the front and middle bay

³⁷ Ibid.,176

and one in the rear bay. Similar to the Yanfusi building, the capital bracket sets and the intercolumnar sets appear identical from the outside: they are all six-*puzuo* and have one *huagong* projected outward and two *ang* installed in order to support the load of the eave (fig.1.2f and fig.1.2i). A set of *chonggong* 重栱 crosses on the lower *ang* and one tier of *linggong* 令栱 (the innermost or outermost bracket in a bracket set parallel to a building elevation) is installed on the upper *ang*. Between the *huagong* and the lower *ang* is a transitional member called *huatouzi* 華頭子 that is also considered a variety of *huagong*. The rear parts of the bracket sets inside the building vary from each other. The capital set projects one *huagong* inward to support the *sanchuanfu* and the tail of its upper *ang* extends to the capital of the *shuzhu* to uphold the *xiapingtuan* (fig.1.2f and fig.1.2g). On the other hand, the intercolumnar set projects one *huagong* inward and a *shangang* 上昂, a diagonal strut, is installed to adjust the inclination of the regular *ang* (fig.1.2j and fig.1.2k). The *xiapingtuan* is braced by the tail of the upper regular *ang*. The *shang'ang*, although mentioned in *Yingzao fashi*, is not often seen in northern Song or Yuan building.

The roof structure of the building has eight rafters and nine purlins in total, similar to those of the Yanfusi building (fig.1.2m). The interior columns are higher than the eave columns, which suggest the hall a *tingtang*-style building. The front bay, which spans three rafters, is crossed by a *sanchuanfu* that is slightly curved on its ends. The *sanchuanfu* connects the eave column from one end and fastens the shaft of the interior

column to the other end. A *dingtougong* 丁頭拱 is projected from the shaft of the interior column to bear this crescent beam. The same member is also found in the main hall of Yanfusi. Above *sanchuanfu* is a two-rafter beam across from the capital of a *shuzhu* that stands on the *sanchuanfu* to hold the *xiapingtuan* to the shaft of the interior column. A little *dingtougong* is also projected to support this beam. A small bracket set, instead of a *shuzhu*, is installed on top of the *rufu* (two-rafter eaves-beam) in order to brace the *zhongpingtuan* 中平櫓. Between the interior column and this small bracket set, a *zhaqian* 筴牽 is installed horizontally.

The structure in the rear bay is simpler than that of the front bay. It is spanned by a *rufu* that supports a *shuzhu* to hold the *xiapingtuan*. The *shuzhu* and the interior column are connected by a horizontal *zhaqian*. Different from the front bay, a two-rafter *shunfuchuan* 順袱串 (along-beam tie) is added beneath the *rufu* to tie the eave column and the interior column.

The middle bay, crossed by three rafters as does the front bay, has two beams: the lower one, *sanchuanfu*, crosses the full span from one interior column to the other, and the top one, *pingliang* 平梁. Under the *sanchuanfu*, there is a *shunfuchuan* tied between the interior columns in order to stabilize the frame. One end of the *pingliang* is put on the capital of the interior column to prop up the *shangpingtuan* 上平櫓, and the other end is supported by a bracket set built and a camel hump, *tuofeng* 駝峰, built on the lower

sanchuanfu to bear another *shangpingtuan*. On the *pingliang*, a *shuzhu* is built on the center to uphold the *jituan*.

Several similarities between the main halls of Tianningsi and Yanfusi are noteworthy. First, both the front bay and middle bay of these two buildings span a distance of three rafters, which results in the enlargement of the entrance and central worship space. Secondly, both of them do not have *pupaifang* atop the eave columns and only *lan'e* is used to tie the eave columns. Third, all the major beams of them, including *sanchuanfu*, *rufu*, *zhaqian* and *pingliang*, are *yueliang* 月梁. It seems that the beams in the Yanfusi hall are a little more crescent than those in Tianningsi (fig.1.2m and fig.1.1l). Moreover, the style of column base of the Tianningsi building resembles one type of the pillar base in the main hall of Yanfusi (fig.1.2n and fig.1.1p). Regarding the modular unit, the width of both is 10 cm, while the length of Tianningsi is 17cm, 1.5cm longer than that of Yanfusi.

3. Zhenrusi 真如寺

Zhenrusi is located at *Zhenruzheng* 真如鎮, a small community in the northwest of Shanghai. A Qing version of *Zhenru lizhi* 真如裡志, Gazetteer of Zhenru Lane, provides a brief history of Zhenrusi:

Zhenrusi, another name was Wanshousi, and commonly known as Dasi (the Grand Temple), was originally located at Guanchang. During the Jiading

period of Song (1208—1224), Monk Yong'an rebuilt the monastery and named it Zhenruiyuan. During the Yanyou period of Yuan(1314-1320), Monk Miaoxin relocated the monastery to a place called Taoshupu and appealed for a new plaque to change the name from *yuan* to *si*. Through the Hongwu(1368-1398) and Hongzhi(1488-1505) periods of Ming, Monks Daoxin and Falei restored the monastery twice.³⁸

真如寺，一名萬壽寺，俗名大寺，舊在官場。宋嘉定間，僧永安以真如院改建。元延佑間，僧妙心移建桃樹浦，請額改寺。明洪武、弘治間，僧道馨、法雷兩次修建。

In a later version of *Zhenru lizhi*, a restoration that took place in 1894, the 20th year of Guanxu光緒 period is recorded. The main hall was said to be restored at that time.³⁹

The complex of the monastery we see today is based on the earlier layout, but most buildings have been constructed in recent decades. When Liu Dunzhen first studied Zhenrui in the 1950s, there merely remained the main hall, two side chamber halls and the Weituodian韋馱殿 (Hall of the Vedas).⁴⁰ Only the main hall, although having been restored several times, has never completely been demolished since the Yuan dynasty. It is given an exact date of 1320, the 7th year of Yanyou period, because of an inscription found on an interior tie beam of the building and it reads:

(The hall) is built on the third day of the seventh month, the seventh year of Yanyou period of Yuan (1320).

岿大元歲次庚申延祐七年癸未季夏月乙巳二十乙日巽時鼎建。

³⁸ Lu Li 陸立, *Zhenru lizhi* 真如裡志, vol.1. 1768(the 33th year of Qianlong period of Qing)

³⁹ Hong Fuzhang 洪復章, *Zhenru lizhi* 真如裡志, p.15. 1918.

⁴⁰ Liu Dunzhen 1951, 91-92

Besides this information for the date, other inscriptions written in ink have been left by Yuan craftsman on the architectural members.⁴¹ Therefore, even though some part of the building is proved to be altered in later times, the Main Hall of Zhenrusi bears sufficient information for the study of Yuan architecture.⁴²

The main hall is oriented north-south, and the main entrance faces south (fig.1.3a). The layout is very similar to those of the Yanfusi and Tianningsi Yuan buildings—it is composed of two rings of columns which form a rectangular and three-by-three-bay plan.⁴³ The *dangxinjian* on the façade is 6.1 meters wide and the *cijians* are 3.65 meters wide. The widths of the bays on the side, from south to north, are 5.3 meters, 5.1 meters and 2.6 meters respectively. The total dimension of the plan is 13.4 meters by 13 meters, which is very close to a square. Moreover, a rectangular altar for Buddhist statues occupies three quarters of the very center bay.

Although the main hall of Zhenrusi is a three-by-three-bay hall, the same as those in Yanfusi and Tianningsi, the roof structure of the Zhenrusi building is somewhat extraordinary and more complicated, compared to the other two Yuan buildings (fig.1.3c). In contrast to the other two Yuan halls, each of which has an eight-rafter roof, the Zhenrusi building is a ten-rafter hall. Crossed by four rafters, the front bay of this

⁴¹ For the details of the inscriptions, see the article, “Shanghai shijiao yuandai jianzhu Zhengru Si zhengdian zhong faxian de gongjiang mobi zi 上海市郊元代建築真如寺正殿中發現的工匠墨筆字” in *Wenwu*, No.3. 1966.

⁴² In the following pages, the author shall note the structure if it is later.

⁴³ According to Liu Dunzhen’s article, when the main hall of Zhengrusi was discovered in the 1950s, it still had a later-added lower eave, as the Yanfusi building does. This later-added eave was removed during the reconstruction in the 1960s.

building is very spacious. A crescent *sichuanfu* 四椽栿(four-rafter beam) spans the front bay and connects the eave column and the interior column. Above this *sichuanfu* is a small bracket set and a *shuzhu* 蜀柱 (dwarf pillar), each of them supporting a purlin. A crescent *zhaqian* ties the bracket set and the *shuzhu* together. Between the pillar and the interior column, a slim lintel, *pingqifang* 平棊枋 (ceiling lintel) is installed, which ties the *shuzhu* and the column and supports the upper ceiling as well. The ceiling, decorated by bracket sets around, spans only the rear half of the front bay, and hides the upper roof from the audience in the building.

The middle bay is crossed by four rafters and its front half is canopied by a hidden roof (*noyane* 野屋根 in Japanese). A *sichuanfu* ties the two interior columns of the middle bay, accompanied by a slim four-rafter *shunfuchuan* beneath. Two small bracket sets are built on the *sichuanfu* to hold a regular purlin and a hidden-roof purlin, *nogeta* 野桁 in Japanese. These two bracket sets are also connected by a *liangchuanfu*, above which is another bracket set upholding the “ridge purlin” of the hidden roof. The structure above the hidden roof is a called *caojia* 草架, rough frame, which is in contrast to the part below the hidden roof. The latter is called *cheshang mingzao* 徹上明造, an exposed roof frame.

Liu Dunzhen pointed out in his article that the hidden roof had become outdated even before the Yuan period and had already disappeared in north China. Therefore the

hidden roof found in Zhenrusi is very unique in Jiangnan or even in the whole country.⁴⁴

The fact that the hidden roof built over entire buildings became common beginning in the 12 century in Japan, where it is known as *noyane*, may suggest some connection between the main hall of Zhenrusi and architecture in Japan.⁴⁵

The rear bay of the main hall is crossed by two rafters. Its structure is similar to the front half of the front bay. A *rufu* 乳栿 spans from the eave column to the interior column and is accompanied by a two-rafter *shunfuchuan*. The small bracket set on the *rufu* upholds the *xiapingtuan* and is also tied with the interior column by a *zhaqian*.

The arrangement of the bracket sets along the ring of eave columns is as follows: on the façade, four intercolumnar sets are installed in the *dangxinjian*, and two installed in each *cijian*; on the sides, each of the front and middle bays has three intercolumnar sets and only one intercolumnar set is installed in the rear bay.

The capital set and the intercolumnar set look identical from the outside—they both project but one tier of *huagong* which is in disguise of a *jiaang* 假昂(pseudo-*ang*, also known as *jia'ang* and overhangs a *shuatou* 耍頭, an overhanging bracket-end and the topmost member parallel to and above *huagong* and *ang* (fig.1.3e). With regard to the rear part, the capital bracket set has one tier of *huagong* projected inward to support the thick *sichuanfu*(fig.1.3f). On the other hand, the intercolumnar set projects one tier of

⁴⁴ Liu Dunzhen 1951, 96

⁴⁵ See the structure of *noyane* in the Upper Daigoji Yakushidō 醍醐寺薬師堂 (1121) and Sanzenin Hondō 三千院本堂 (1148) in Kyoto, and Taimadera Mandaradō 當麻寺曼荼羅堂 (1161) in Nara.

huagong and a *shangang* is installed on the *huagong* to adjust the bevel of the upper most cantilever, *angting tiaowo* 昂枅挑斡, a *xia'ang* which does not project at the front and used to carry a *xiapingtuan* purlin (fig.1.3g).

After his personal investigation of the building, Liu Dunzhen believed that the bracket sets along the ring of the eave columns of the main hall have little chance of being Yuan remains. He suggested that the bracket sets at the south side and some at the east and west side were installed during the restoration of the Guangxu period, and the others cannot be earlier than the Ming dynasty.⁴⁶ Liu's evidence is the inconsistency of the style of *ang* among the different sets. Unfortunately, after the recent restoration, the installation that Liu witnessed during the 1950s has changed. Today, each bracket set looks exactly the same from the outside. However, we still can find evidence to prove the younger age of the bracket sets. Considering the dimensions of *cai*, those of the Main Hall of Zhenrusi are 13.5 by 9, which are much smaller than those of the buildings in Yanfusi and Tianningsi. Given a smaller *cai* on a similar scale of building, it is obvious that the bracket sets of Zhenrusi, although may bear some earlier features, are not remaining from 1320. Liu also indicated that even for the roof structure of the building, except for the columns, the ceiling board and the hidden roof, a number of members could have been replaced during the later restorations.⁴⁷ Therefore we should be very

⁴⁶ Liu Dunzhen 1951, 94

⁴⁷ Ibid., 96

careful when discussing the main hall of Zhenrusi as a Yuan building.

4. Yunyansi 雲岩寺

The architectural compound of Yunyansi is built along the south hillside of Huqiu 虎丘, Tiger Hill, the most prominent place of interest in Suzhou. Standing at the top of a hill, Yunyansi pagoda is always worshiped as the landmark of the historical city of Suzhou. Yunyansi has a long tradition that can be traced early to the Eastern Jin (317-420). In a Qing dynasty version of *Suzhou fuzhi* 蘇州府志 (Gazetteer of Suzhou Prefecture), the history of Yunyansi is recorded as following:

The Chan Monastery of Yunyan is built on the Tiger Hill beyond the outer city. It was originally the villa of Wang brothers and was donated to serve as a Buddhist worship space in the second year of Xianhe reign period (327). During the Renshou reign period (601-604) of the Sui dynasty, a seven-story pagoda was established behind the (main) hall. The monastery was at first divided by the Sword Pool into an east section and a west section that were united later. Reconstruction work took place during the Zhidao reign period (995-997) of Song. The Chief of the Prefecture, Wei Xiang, presented a memorial to the emperor and then the monastery was granted its current name. The Pavilion of Imperial Books was built in the middle Jingyou period (1034-1037) and the Sutra Library was built in the middle Shaoxing period (1131-1162). They were both demolished by the troops after a short while.⁴⁸ As recorded by Huang Jin, (the monastery) was rebuilt in the fourth year of Zhiyuan period (1338) of Yuan. A fire occurred in the middle Hongwu period (1368-1398) and the abbot Fabao presided over a reconstruction in the early Yongle period (1403-1424). The pagoda was damaged by the fire in the middle Xuande period (1426-1435) and was reconstructed by the Provincial Governor Zhou Chen in the Zhengtong period (1436-1449). Written by Zhang

⁴⁸ Here suggests the turmoil between Song and Yuan.

Yiyou, on the day when *lupan*⁴⁹ was just installed on the pagoda finial, dozens of white cranes were hovering above the pagoda for a long time. Zhou Chen noted by himself that a five-bay sutra library was also built at the same time to worship the classic sutra of Tripitaka conferred by the emperor. The monastery was again burned in winter in the second year of Chongzhen reign period (1629). The Provincial Governor Zhang Guowei rebuilt the main hall. A garrison commander Yang Chengzu re-established the Hall of Heavenly Kings in the early years of Shunzhi reign period (1644-1661). During the Kangxi period (1662-1722), the emperor visited the monastery during his inspection tour to the south and granted a plaque. The main hall was again on fire in the 53rd year of Kangxi period (1714) and renewed by Li Xu, an official, to censor the salt industry. Emperor Gaozong (Emperor Qianlong) visited the monastery several times during his tour to the south and bestowed his poem, prose, couplet, inscribed board, Tibetan incense and sacrifice vessels. In the 30th year of the Qianlong reign period (1765), the Empress Dowager visited the place and she bestowed silver and gold to the monastery twice. In the 50th year (1785), Monk Zutong raised a fund for restoration. The monastery was destroyed again in the tenth year of Xianfeng period (1860). In the third year of Tongzhi period (1864), a military officer Liu Qifa donated some money to build a stone hall for Bodhisattva Avalokiteshvara and noted by himself. In the tenth year (1871), a native of Suzhou, Chen Deji, raised a fund to build the Hall of Heavenly Kings.

雲岩禪寺在郭外虎丘，晉司徒王珣及其弟璿之別業。鹹和二年捨建。隋仁壽中建塔七成於殿后。初于劍池分為東西二寺，後合為一。宋至道中重建，郡守魏庠奏，賜今額。景祐中建禦書閣，紹興中建藏殿，尋皆毀於兵。元至元四年重建，黃潛記。明洪武中火，永樂初住持法寶重修。宣德中浮圖毀於火。正統間巡撫周忱重建。露盤初上有白鶴數十迴旋塔頂，久之乃去，張益有記。又建藏經閣五楹，供奉敕賜大藏經典，忱自為記。崇禎二年冬，寺復火。巡撫都禦史張國維重建大殿。國朝順治初總兵楊承祖重建天王殿。康熙間，聖祖仁皇帝南巡，臨幸賜額。五十三年大殿火，巡鹽李煦新之。高宗純皇帝南巡，屢次臨幸，賜詩章聯額藏香供器。三十年奉皇太后鑾輿臨幸，頒白金兩次。五十五年僧祖通募修。鹹豐十年毀。同治三年署左軍守備劉啓發捐建石觀音殿，自為記。十年郡人陳德基募建天王殿。⁵⁰

According the text above, Yunyansi served as a very important Buddhist institution

⁴⁹ Lupan, also called *Xianglun* 相輪, is a number of tiers of wheel-like elements in the middle part of the pagoda finial.

⁵⁰ Li Mingwan 李銘皖, *Suzhou fuzhi* 蘇州府志, *siguan* 4 in *juan* 42.

in Suzhou since the Song dynasty, and emperors paid close attention to it. It is also ranked No.9 among *shicha* 十剎, the Ten Monasteries.⁵¹ Although it suffered its share of chaos and turbulences, restoration and reconstruction of this monastery were never ceased. Most were hosted by a provincial governor or officials of the same rank. Due to its complicated history of restoration and reconstruction, people should be very careful to define the age of a specific building.

Ershanmen 二山門 of Yuanyansi is the oldest timber building among the complex. The only historical record concerning its construction history is available in an account written by Huang Jin 黃潛 in the sixth year of the Zhizheng period of Yuan(1344). Dedicated to the re-establishment of Yunyansi in 1338, it reads:

In the fourth year of the second Zhiyuan period (1338), the Institute of Buddhist and Tibetan Affairs ordered Puming, the Chan Master of Huideng Yuanzhao, to supervise monastic affairs (in Yunyansi). Then the spiritual sculptures of Buddha, Bodhisattva, Arhat and Vajra were decorated. Statues of the Three Great Bodhisattvas, Manjusri, Samantabhadra and Avalokiteshvara, were built. The pagoda of the Buddhist relics and the sutra library of Tripitaka were repaired. Copper of nice quality was casted to produce huge bells. The architecture was renewed or restored based on the severity of damages. Masonry and other labor were carried out at the same time. The Buddha Hall, the Pavilion of A Thousand Buddhas, the Hall of Three Great Bodhisattvas, the Court of Sutra Library, the Meditation Hall, the Accounting House, the three gates, the two corridors, the ancient trees, the Cold Spring, the Sword Pool and the other pavilions remain their old conditions. The ancestors' pagodas, the dormitories, the storehouse, the

⁵¹ During Southern Song and Yuan, fifteen biggest monasteries of Chan Buddhism, most in Jiangnan, were distributed into two grades and each given a rank. The top five are called *wushan* 五山, means Five Mountains while the rest ten were called *shicha*, the Ten Temples. The system of *Wushan Shicha* 五山十剎 symbolized the institutionalization of Chan Buddhism in Song-Yuan era. See more discussion on the institution of *Wushan shicha* in Zhang Shiqing's book, *Wushan shichatu yu Nan Song Jiangnan Chansi* 五山十剎圖與南宋江南禪寺(Nanjing, 2000).

kitchen, the bathroom, as well as the dining hall, were repaired. The building that can be seen from Pingyuan Hall and stands in front of the Little Wuxuan Hall is the Second Gate. Then people reconstructed it like a new building.

重紀至元之四年，行宣政院，以慧燈圓照禪師普明嗣領寺事。至則裝飾佛菩薩阿羅漢金剛神像，造文殊普賢觀世音三大士，繕治舍利之塔、經律論之藏，範美銅為鉅鐘。視棟宇之摧墮蠹敝者，或因或革，石役並舉。大佛殿、千佛閣、三大士殿、藏院、僧堂、庫司、三門、兩廡、古木、寒泉、劍池、華雨諸亭則仍其舊。祖塔、眾寮並庾庖湑宴休之。平遠堂遊眺之小吳軒山之前為重門，則改建使一新。⁵²

In this paragraph, the Yuan literati Huan Jin recorded a lot of details of the reconstruction of 1338. He particularly pointed out that the *Second Gate*, referred to Chongmen 重門 in his writing, was rebuilt as brand new. This is the only information about the construction history of Ershanmen among all pre-modern gazetteers of Suzhou or Yunyansi. Moreover, even later restorations during the Ming-Qing era were also recorded in as much detail as possible, but Ershanmen was never mentioned as being rebuilt or restored.⁵³ These textual materials are the only indirect evidence to the date of the building. However, when Liu Dunzhen first investigated the building in the 1930s, on the basis of the style and dimensions of the timber structure, he believed that the building basically remained from the reconstruction of 1338. The following pages concerning on the building will substantiate Liu's opinion.

⁵² Huang Jin 黃潛, "Huqiu Yunyanchansi xingzaoji 虎丘雲岩禪寺興造記" in *Huqiu shanzhi* 虎丘山志, by Huang Yujian 黃輿堅(1676, the Bingchen 丙辰 year of Kangxi period).

⁵³ Another four accounts are also available in *Huqiu shanzhi*, recording four restoration activities during the Ming dynasty, which also accords with the history of Yunyansi written in *Suzhou fuzhi*.

Ershanmen is oriented north-south with a front entrance receiving visitors toward south and a rear exit leading people to the main compound of Yunyansi at the north. Instead of having a squarish, three-by-three-bay plan, like most other Yuan buildings discussed in this chapter, the plan of Ershanmen is arranged as three bays at the long side and two bays at the short side (fig.1.4a). The length of the *dangxinjian* on the façade is nearly one-and-a-half *cijian*. The width of the *cijians* on the façade is also equal to those of the two bays on the sides. The whole ratio of the plan is approximately 7 to 4, which is a very typical proportion for the plan of gate hall.

The interior design of Ershanmen further differentiates it as a gate hall from other Yuan buildings of a square plan, most of which are worship halls. The *dangxinjians* are all installed with arched doors, while the *cijian* are divided by slim walls into separated rooms. Statues of Heavenly Kings used to be enshrined in the front side rooms, but are no longer seen today. The side rooms at the back preserve several stele dated from Yuan and Ming bearing relevant information about the monastery (fig.1.4a).

The plan of Ershanmen resembles that of the Xiangdian 香殿, the Incense Hall of Dongyuemiao 東嶽廟 in Emei, in many ways.⁵⁴ Due to their similar function as the gateway to the main hall or to the main compound of the monastery, both of them

⁵⁴ For the introduction of Xiangdian, see section 2.2.2 in Chapter 2.

have a relatively long and narrow plan of three-by-two bays. A comparative study considering these two buildings, respectively, from Jiangnan and Sichuan will be included in Chapter 4.

The arrangement of the bracket sets is as follows. Two intercolumnar sets are installed in each *dangxinjian* on the long sides and one intercolumnar set is installed in each of the other bays. The intercolumnar set is almost identical with the capital set from the outside, which projects but one tier of *huagong* and is defined as four-*puzuo*(fig.1.4b and fig.1.4e). Atop the *huagong* is a traversal bracket called *linggong*, the outmost traversal bracket installed in a bracket set. The *linggong* supports the eave lintel, *liaoyanfang* 撩檐枋, through three blocks; no *ang* is installed in the whole building (fig.1.4c). It is noteworthy that Ershanmen of Yunyansi is the only building among those in this chapter that does not have any *ang*. Moreover, a number of Sichuan Yuan buildings lack *ang* either. Such an issue will be discussed in Chapter 3.

In the case of the rear part of the bracket sets, the capital sets project one tier of *huagong* inward, supporting the crescent *rufu* (fig.1.4c and fig.1.4d). By contrast, the intercolumnar set projects two tier of *huagong*, in the style of *touxinzhao* 偷心造 (successive projection without traversal arms). A diagonal cantilever, *angting tiaowo* 昂枅挑斡, is built above the *huagong* to pass the load from the purlin to the eave

column (fig.1.4f and fig.1.4g). A decorative detail is noticed on the capital block of each bracket set. Each angle of the capital block that has a square plan is carved into two curved segments (fig.1.4h). Such decoration is also found in the capital block of the main hall in Xuanyuangong 軒轅宮.⁵⁵

In contrast to a Buddha hall, in which bays on the sectional view are composed differently to meet the arrangement of altars or statues, the north-south sectional view of Ershanmen displays a perfect symmetry in its timber frame (fig.1.4i). The whole building is a four-rafter *tingtang* 廳堂 house using three columns. The front bay, as well as the rear bay, is crossed by a crescent *rufu* that is supported by the bracket set on the eave column at one end and is inserted into the shaft of the interior column at the other end. A *dingtougong* 丁頭栱, is projected from the shaft of the interior column to buttress the *rufu*. A *shunfuchuan*, which ties the eave column and the interior column, is built beneath and parallel to the *rufu*. Between them is installed a structure called *yidou sansheng* 一鬥三升, a simplified bracket set using one capital block, one *guazigong* 瓜子栱(short bracket) and three small blocks to support a beam.

Above the *rufu* stands another bracket set that is crossed by the *zhaqian* 筭牽 and by the *pingtuan* in a different direction (fig.1.4j). The *zhaqian* is also inserted into the shaft of the interior column and supported by another *dingtougong*.

⁵⁵ See section 1.6 of Chapter 1.

Pingliang 平梁 that usually bears a *shuzhu* to hold the ridge of the building is not fixed in this building. It is the interior column that supports the *jituan* through a capital block and a set of *chonggong* (fig.1.4m).

Three issues of the framework of the building are remarkable. First, there is no *pupaifang* 普拍枋 built on the eave column top, only *lan'e* is installed, which resembles the main halls of Tianningsi and Yanfusi. Secondly, the base of the column is simply a plain stone cylinder of 70 cm high, not similar to any other Yuan building in Jiangnan (fig.1.4h). Moreover, a lattice ceiling board, *ping'an* 平闇, is fit in the east and west *cijians* above the *zhaqian* (fig.1.4l and fig.1.4n). This is the only lattice ceiling board of the Yuan period found in Jiangnan. Due to the special function of this building, a couple of structural designs seem unique among the Jiangnan Yuan buildings. It is an exceptional case to see how the timber frame can be adjusted to meet the different usage of the building. The Incense Hall of Dongyuemiao in Emei, Sichuan, is its good counterpart in western China.

5. Jijiansi 寂鑒寺

Jijiansi is built on a mountain known as Tianchishan 天池山, fifteen kilometers to the northeast of Suzhou. This monastery is known for three stone structures that are dated to the Yuan dynasty. One is a three-bay worship hall, and the other two are small stone

chambers. Most of the rest architecture in the complex of Jijiansi has been constructed during recent decades.

The monastery was once the private residence of Zhang Yu 張裕, the Prefect of Kuaiji 會稽 Prefecture during the Liu Song period(420-479 of the Six Dynasties). In the Qiandao 乾道 period (1165-1175) of Southern Song, an official, Zhang Tingjie 張廷傑, expanded the place into his villa and erected some Buddhist sculptures. It was not until the seventeenth year of Zhizheng 至正 reign period(1357) of Yuan that the place was developed into a Buddhist monastery by Monk Daozai 僧道在. An account written by Monk Kexin 釋克新 in 1369, the second year of the Hongwu 洪武 reign period, is known as Tainchi Jijianchan'an ji 天池寂鑒禪庵記(The Account of Jijian Zen Nunnery of Tianchi). It records the course of construction in 1357 as follows:

(People) built a three-bay stone hall and carved the statues of Sakyamuni, Bhaisajyaguru (the Buddha of Medicine) and Amitaba with handy rocks. The statues of the bodhisattvas and guardians, as well as the worship vessels, are all made in stone. An outer gate built in stone and covered by a double eave is called the Tower of the Heavenly Lantern because it was lightened by oil lamp during the night. Thirty-five titles of Buddha are carved on the cliff with two pools chiseled on each side. Two chambers, built for Maitreya and Amitaba, respectively, are erected in stones: one is called the Palace of Tusita Heaven and the other is called the Park of Ultimate Bliss. A Buddhist pagoda is built in the front, loftily facing the stone chambers. The other buildings, such as the reciting room, the kitchen and bathroom, and the guest house are all constructed like this.

作石殿三間，就石肖釋迦藥師彌陀像，其菩薩侍衛之神與供養之具皆石為之。累石作外門，門上為重屋，夜真膏火其中，曰天燈樓。摩崖刻三十五佛名，鑿池左右，立石為彌勒、彌陀屋焉，署曰“兜率宮”“極樂園”。

前樹梵塔，對峙巍然。他及禪誦之室，庖湍之所，資客之館，鹹具如式。⁵⁶

In this account, the establishments of the three Yuan structures are briefly introduced. Since they are made in stones and such materials are not easily burned, altered or perished, there is almost no disputability on their date of Yuan. Since architecture that is mainly constructed in stones is never mainstream in pre-modern China, it is widely accepted that when constructing a stone structure craftsmen usually imitate the style of contemporary timber buildings in many aspects. These three monuments in Jijiansi, along the same line, will provide supplementary information for the study of Yuan timber architecture.

The small structures, Doushuaigong 兜率宮 (the Palace of Tusita Heaven) and Jileyuan 極樂園 (the Park of Ultimate Bliss), can be barely defined as “chambers” or “small houses”. In fact they are niches or miniature buildings, enshrining the statues of Maitreya and Amitaba respectively.

Jileyuan is a one-bay “house” with a nine-ridged roof of double eaves, and south faces (fig.1.5a). It is built on a *xumi* 須彌 base and is 2.61 meters wide and 1.20 meters deep. Its height is up to five meters in total. Two door panels are installed on the side of the façade. The eave columns are tied only by *lan’e* and no *pupaifang* is installed, which resembles Ershanmen at Yunyansi and the main hall of Tianningsi. Beneath the eaves, it is not the bracket sets that support the eave lintel but an architrave of curvilinear

⁵⁶ Liu Xujie 1979,44

profile.

Each column of Jileyuan is 2.72 meters high, the diameter of which is 26 centimeters. It is slightly tapered at the top. The pillar base, composed by a *zhuzhi* 柱欂 at top and a *zhuchu* 柱礎 at bottom (fig.1.5b) and the upper part, *zhuzhi*, is very similar to that of the main halls at Zhenrusi (fig.1.5c), Tianningsi (fig.1.5d) and Yanfusi(fig.1.5e). This is strong evidence showing what a Yuan column base would look like in Jiangnan area. With regard to Doushuaigong, I shall pass over it since it is a quite similar but a much simpler and rougher structure compared to Jileyuan (fig.1.5f).

Different from the other two miniature chambers, Xitiansi 西天寺 (the Temple of West Heaven), the Main Hall of Jijiansia, is a regular size stone structure. The hall is three-bay wide and has a nine-ridged roof of single eave. Its façade faces south(fig.1.5g). Similar to Jileyuan, the eave columns of Xitiansi are tied merely by *lan'e* and the bracket sets are replaced by a simple architrave. The column base is also identical with that of Jileyuan and Doushuaigong (fig.1.5i and fig.1.5b). In the *dangxinjian*, two accessory columns are installed to reduce the span of *lan'e*. The width of the façade is 7.64 meters in total. The ratio of the *dangxinjian* to the *cijian* is close to 3:2, similar to the façade of Ershanmen in Yunyansi.

The plan of Xitiansi is divided into two areas by the interior columns (fig.1.5k). The front three bays serve for rituals and worshippers (fig.1.5n), while the rear three bays

are actually three niches enshrining statues (fig.1.5l). The middle niche, which is much deeper than the side ones, hosts the statue of Avalokitesvara (fig.1.5h). It is noteworthy that the stone hall has two exits chiseled on the side wall, given the fact that most Yuan timber halls usually have rear exits instead of side ones.

Inside the building, each bay has a flat ceiling panel (fig.1.5m) and the middle niche that hosts Avalokitesvara is canopied by a decagonal coffer, *zaojing*藻井, to claim its dominant position. The coffer is decorated with lotus, *ruyi*如意 and *taiji*太極 patterns (fig.1.5j). Liu Xujie suggests in his article that the decoration on this *zaojin* has some taste of Tibetan Buddhism.⁵⁷ His hypothesis seems quite logical for the Mongol rulers of this time prioritized Tibetan Buddhism. It is not surprising that the stone temple has something Tibetan.

Yanfusi, Tianningsi and other Buddhist monasteries discussed in this chapter are unquestionably institutions of Chinese Buddhism. Their histories can be traced much earlier than the Yuan dynasty. Therefore, the architecture and the layout of the monastery, if available, are not affected by the culture of the contemporary Mongol rulers. On the other hand, the place of Jijiansi did not become a Buddhist monastery until the Yuan period. The layout of Jijiansi is loose and free and is anything but a symmetrical and orderly plan that a typical Chinese Buddhist monastery would have.

The stone monuments in Jijiansi are very unique in Jiangnan. Although the

⁵⁷ Liu Xujie 1979, 46

miniature chambers are something between architecture and sculpture, they still provide us with architectural details. The hall of Xitiansi is a well-preserved masterpiece of construction of Jiangnan. A comparative study in Chapter 4, on Yuan stone architecture between Jiangnan and other area will include this case again.

6. Xuanyuangong 軒轅宮

Xuanyuangong was originally called Xuwangmiao 胥王廟 (Temple of King Xu) or Lingshungong 靈順宮 (Lingshun Palace). It is located at Yangwan 楊灣, a village on a peninsula known as Dongshan 東山 southeast of Lake Taihu. The temple was first built in memory of Wu Zixu 伍子胥, a highly apotheosized official who lived in the Spring and Autumn era (722 BCE-481 BCE) and was the prime minister of the state of Wu 吳國. Wu is worshiped by natives of Suzhou for his virtues and contributions to the ancient city, and he is also worshipped as a river god, with the title of Taoshen 濤神, the God of Waves. An introduction to this temple is available in *Taihu beikao* 太湖備考 (References to Lake Taihu), a gazetteer of *Taihu* written in the Qianlong 乾隆 period of Qing dynasty. It reads:

Xuwangmiao, also called Lingshungong, is situated at Yangwan, Dongshan. It is unknown when the temple was first built. During the Yuan period, a person named Wang Lanchao rebuilt the temple, and a front hall was established in late Ming. Since the temple enshrines the Prime Minister of Wu 吳, Wu Zixu, it is called the Temple of King Xu. The above is recorded by

Chen Hu.⁵⁸

胥王廟，即靈順宮，在東山楊灣。始建無考。元時有王爛鈔者重建。明末建前殿，祀吳相伍大夫，稱為胥王廟，陳瑚記。

In addition, the author also annotated this entry with a record from another earlier source.

Although it is not yet clarified what the source is, the quotation is surely informative and it reads,

The Lingshun Palace at Dongshan enshrines the Prime Minister Wu Zixu. It was first built in the second year of the Zhenguan period of Tang (628). During the time when Emperor Gaozong of Song fled to the south, the government army that escorted the emperor parted and passed through the lake. The waves were too stormy to sail. Then the God of Waves (in which case, the apotheosized Wu Zixu) responded to the prayers at once. Therefore, the Emperor later sent some officials to restore the temple and upgraded Wu Zixu from *yuan* (minister) to *wang* (king).

東山靈順宮，祀相國伍員，創自貞觀二年。宋高宗南渡，扈蹕官軍分道經湖，風濤不可航，濤神立應，為遣官葺治，封員為王。

According to the textual resource above, the monastery was first built in the Tang dynasty to worship Wu Zixu when it was called Lingshungong at that time. After Emperor Gaozong fled to the south, a major restoration was bestowed upon the temple and it was given the name Xuwangmiao. A Yuan native, Wang Lanchao, rebuilt the temple complex and the front hall was constructed in late Ming. The temple, originally the shrine of Wu Zixu, was converted to worship Lord Xuanyuan 軒轅大帝⁵⁹ in order to evade demolition

⁵⁸ Jin Youli 金友理, *Taihu beikao* 太湖備考. *Juan* 6.

⁵⁹ Xuanyuan is also known as Huangdi 黃帝, Yellow Emperor. According to early Chinese mythology, he is the mutual ancestor of all Chinese people and his personal name is Gongsun Xuanyuan 公孫軒轅.

during the early 20th century.⁶⁰ That is the reason why it is called Xuanyuan Palace now.

The issue of the exact date of the Main Hall is rather complicated. The legible inscriptions written in ink on the major beams indicate that two restorations took place in the sixth (1649) and twelfth (1655) years of Shunzhi/順治 period of Qing, respectively, which means that the beams bearing those inscriptions and the structure above the beams would be no earlier than 1649.⁶¹ Chen Congzhou pointed out in his article that some of the columns and all the column bases very like remain from the Yuan dynasty.⁶² Moreover, even though some part of the structure might have been altered in later restorations, other parts of the building might still inherit its original style and some regional features. Therefore, the Main Hall of Xuanyuangong still bears plenty of value as a “Yuan building.”

The main hall of Xuanyuangong is oriented east-west and its front entrance faces west toward Lake Taihu. This three-by-three-bay building stands on a platform of 64 centimeters high. The façade is 13.8 meters wide with a *dangxinjian* of 5.6 meters and two *cijian* of 4.1 meters. The side elevation of the building is 11.4 meters wide, the central bay of which is 5.6 meters wide and two side bays of which are nearly half as wide as the middle one. The ratio of the façade to the side elevation is therefore about 5 to 4 (fig.1.6a).

⁶⁰ The government in the early 20th century tried to demolish the temple for some unknown political reason.

⁶¹ Chen Congzhou 1954, 68

⁶² The columns and column bases will be discussed in later paragraphs, and will be compared to other Yuan buildings in this chapter.

There are two types of column base installed in this building. Type I, planted under the four interior columns and two eave columns alongside of the front *dangxinjian*, has a thick timber *zhuzhi* 柱櫟, a transitional block between the column and the column base, and a square plinth of 94 centimeters wide (fig.1.6b). The diameter of the ovolo moulding part is 74 centimeters. Bases of Type II are planted under the rest of the columns (fig.1.6c). A plain stone *zhuzhi* with a bowl-shaped bottom—such a style of *zhuzhi* is often seen in other Yuan buildings in Jiangnan (fig.1.5b-e)—is of the same thickness as the column and is directly on the plinth that is planted into the ground.

The arrangement of the bracket sets is as follows. On the façade, four intercolumnar sets are installed in *dangxinjian* and two are installed in each *cijian*. On the side, however, only three intercolumnar sets are installed in the middle bay and one is installed in the side bay. The number of the intercolumnar sets in this building, similar to that of the Main Hall in Zhenrusi, surpasses most other Yuan buildings of a similar scale in Jiangnan, which may imply the possibility of a later period.

The capital set and the intercolumnar set share an identical appearance from the outside. They both project two tiers of *ang* and one tier of *shuatou* on the top (fig.1.6f). Due to the different functions of these two kinds, *ang* on the capital set is actually *huagong* in the disguise of a *jia'ang* (fig.1.6d), while *ang* on the intercolumnar set is a real *ang* and does have some structural functions (fig.1.6g).

From the sectional view of the capital set (fig.1.6d), we can see two tiers of *huagong* project inward to buttress the crescent *rufu*. The sectional view of the inter-columnar set, on the other hand, shows that two tiers of *huagong* project inward, as well, and support the tails of the *ang* (fig.1.6g and fig.1.6h). The upper *ang* extends till the position right beneath the *xiapingtuan* and carries the load of the purlin through a *sufang* 素方 (plain beam) and one layer of bracket arm. The lower *ang*, not parallel to the upper one, reinforces the angle of the upper *ang* and is fit with a wedge called *xuexie* at the bottom.

It is quite noteworthy that only the capital block, *ludou*, of the intercolumnar set on the central of the façade has its angles carved into two curved segments (fig.1.6g), while no other bracket sets have such a decoration on their capital block. First, since such a decoration is also found on every bracket set of Ershanmen in Yunyansi (fig.1.4h), this is no doubt a regional feature of Suzhou. Second, due to the inconsistency of the style of capital block, it is very likely that the bracket sets of the main hall in Xuanyuangong we see today were not installed during the same time or by the same workshop.

According to Chen Congzhou, since there are some inscriptions dated from the Qing dynasty written on *sichuanfu* of the building, the majority of the roof structure has been altered by the Qing craftsmen. Seen from its sectional view, the timber frame of the building is quite symmetrical (fig.1.6i). The front bay has the same composition as the rear bay: they both are crossed by a crescent *rufu*, supported by two tiers of *dingtougong*

丁頭栱, and the capital bracket set.

Above the *rufu* is a small bracket set supporting a *xiapingtuan*. A *zhaqian* which is also a *yueliang* spans the distance between the *xiapingtuan* and the interior column. The middle bay of the building is spanned by a crescent *sichuanfu*, above which is the *pingliang*. The two interior columns are also connected by a *shunfuchuan*, each of which upholds the *zhongpingtuan* through a bracket set. There is no *shuzhu*, installed in this building to uphold the *jituan*. Instead, the ridge (*jituan*) of the building is sustained by a bracket set with a set of *chonggong*.

With regard to the accurate date of the building, Chen Congzhou concluded that compared to the other Yuan buildings in Jiangnan, the structure above *sichuanfu* is clearly dated to the Qing dynasty, due to the inscriptions. The bracket sets on the eave columns are suspected to be Ming and the tapered columns and column bases can be the only things dated from Yuan (fig.1.6i).

In the next chapter, the author will discuss thirteen Yuan or early Ming buildings located in Sichuan and Chongqing.

CHAPTER TWO

BUILDINGS ALONG THE UPPER YANGZI RIVER: SICHUAN AND CHONGQING

In this chapter, the author shall elaborate thirteen Yuan and early Ming buildings in eleven sections (two in sub-sections), on their construction history, architectural design, and details of critical components. Comparative study, if included, is only for better understanding of specific points, and will not be delved into in this chapter.

The locations of thirteen Yuan and early Ming building in Sichuan and Chongqing that will be discussed in this thesis are plotted out on Map 5. Two buildings, the Main Hall of Qinglongsi and Pingxianglou of Jianghouci, are situated in the remote mountain area of Lushanxian 蘆山. One monument in Meishan 眉山 and two in Emei 峨嵋 are built along Minjiang 岷江, one of the major branches of the Yangzi River in Sichuan basin. At the north drainage area of Fujiang 涪江 and Jialingjiang 嘉陵江, the northern border of the Sichuan Basin and also the gateway to Shaanxi province, cluster seven structures. This area also suffers a lot of damages caused by the earthquake that occurred on May 12, 2008. The monastery at Dou-Koucun 豆叩村⁶³ is the closest monument to the earthquake epicenter, Wenchuan 汶川, among all the buildings discussed in this chapter. To my knowledge, the non-timber part of the architecture affected by the earthquake has been damaged to various degrees, but the timber skeletons of most buildings are not fundamentally shaken.⁶⁴

⁶³ Hereafter, the Chinese terms *shi* 市, *zhen* 镇, *cun* 村, etc. are omitted in English.

⁶⁴ See Table 3 for the dates and locations of the buildings.

1. Lifengguan 醴峰觀

Lifengguan, the Daoist Temple of Lifeng, is located on the ridge of Huanghoushan 皇后山, the Queen Mountain, that is to the northwest of the county seat of Nanbu. Since there are several ancient wells on the mountain where sweet spring water issues from the earth, the mountain is also called *Lifeng* 醴峰, “the mountain of sweet water”. The mountain of Huanghoushan is related to a ruler of Sichuan in the Western Jin dynasty (265-316). During this period, the Prince of Chengdu, whose name was Li Xiong 李雄 (274-334), declared his independence from the Jin and made Sichuan the Dacheng Kingdom 大成國 (304-347), which was one of the Sixteen Kingdoms during contemporary with the Eastern Jin period (317-420). Li Xiong himself became Emperor Wu of Cheng (Han) 成武帝 in 304, and, as one of the best-known rulers of Sichuan when it was an independent state, he once travelled to this mountain and showed his fondness for the spring water by honoring the wells with his personal favor. Though nothing can fairly testify to when the temple was first built, it is very likely that the temple was constructed soon after Li Xiong’s departure, since the temple is also known as Lifengguan 李封觀, the same pronunciation but different characters of the other name, Lifengguan 醴峰觀. In this context, Lifengguan 李封觀 suggests “a temple honoring Li Xiong”. Moreover, when Li Xiong’s mother died, he built a tomb for her exactly behind the temple. The tomb, called Huangniangfen 皇娘墳, the Tomb of the Queen Mother, by

the local people, is a three meters high and ten meters wide mound, which can be seen behind the temple today. Some foundation stones of the mound are exposed on the northeast corner. During the early twentieth century, the local inhabitants expanded the temple into a symmetrical complex that has three main buildings on the central axis. These buildings are, from south to north, *shanmen* 山門 (the gate of a Buddhist or Daoist temple), *Daxiong dian* 大雄殿 (the main hall) and *Huangniandian* 皇娘殿 (the Hall of Queen Mother), which is apparently in memory of Li Xiong's mother.⁶⁵ The most valuable building in this temple complex is the main hall, which has been proved a Yuan building of the early 14th century. Thanks to the Yuan craftsmen who had left an inscription on a major beam, the building can be exactly dated to 1307, the eleventh year of the *Dade* 大德 reign period of Yuan.⁶⁶

The main hall of Lifengguan is orientated north-south with its front entrance facing the south, and has a three-by-three-bay plan (fig.2.1a). Though such a layout is usually supposed to have a column arrangement of sixteen columns in shape of two rectangular rings, this building only has fourteen columns, which indicates that two front eave columns were removed purposefully (fig.2.1a). This type of columniation, called *jianzhuzao* 減柱造, eliminated-column style, is very popular among Yuan timber

⁶⁵ The information about Lifengguan has not yet been published. I learned the temple history from *Diliupi quanguo zhongdian wenwu baohu danwei shenbao cailiao* 第六批全國重點文物保護單位申報材料 (Research Materials for the Sixth Group of National Cultural Heritage Monuments) that is now retained in the archives of the cultural heritage administrative office of the Nanbu county.

⁶⁶ The inscription on the beam reads “Dayuan Dade shiyinian taisui dingwei zhengyue bingyin 大元大德十一年太歲丁未正月丙寅”. The author did not see the inscription by herself. This information is recorded in the Research Materials. See footnote 1.

buildings in north China.⁶⁷

The plan of the Main Hall is almost a square, considering its dimension of 7.90 by 8.05 meters. Moreover, on each side of the building, the width of the central bay is approximately twice the side bay, which enables a spacious room in the center of the hall. Brick walls are built on the east and west sides, and the front entrance is left semi-open as a porch. A slim board, functioning as the background of the Daoist statues on the center altar, is installed in the rear side of the middle central bay.

The façade of the building(fig.2.1b)⁶⁸ indicates that the Main Hall is a one-story building with a nine-ridged roof built on a platform of 20 centimeters high. The roof corners are highly propped up like wings. The top ridge of the roof is decorated with ceramic dragons, cranes, horses and other animals. Bracket sets are built on the corners while three inter-columnar sets are evenly installed between the corner columns. Since two columns on the façade have been removed, a tie beam, called *lan'e* 闌額 or *yan'e* 簷額 in Song terminology,⁶⁹ is curved downward and was made thick enough to span the façade about 8 meters wide.

The building has two general types of bracket sets: one has two tiers of *huagong* 華

⁶⁷ See Chapter 3 and 4 for more discussion on *jianzhuzao*.

⁶⁸ The condition of the building today is quite different from its original design displayed in fig.2.1b. Since a prayer hall is added right in front of its front entrance, we cannot see the panorama of its façade now.

⁶⁹ According to *juan* 5 of the *Yingzao fashi*, the column-top tie beam, which ties the eave columns, is called either *lan'e* 闌額 or *yan'e* 簷額 depending on the thickness of the member and whether the ends of the tie beam project beyond the column or not (see Liang Sicheng, *Yingzao fashi zhushi*, p.133). In the Main Hall of Lifengguan, since the ends of the column-top tie beam are invisible, it is unknown whether this tie beam is a *lan'e* or *yan'e*. In Ming-Qing architecture, the column-top tie beam became thicker and was renamed as *da'efang* 大額枋, literally meaning big column-top-tie. In this chapter, I will call it either *da'efang*, *lan'e* or *yan'e* depending on the context.

栱(projecting bracket), and the other has only one tier. According to the *Yingzao fashi*, the former is a five-*puzuo* 鋪作 bracket set, while the latter is a four-*puzuo* bracket set. The five *puzuo* sets are most applied on the façade, usually considered the most important part of a building. Those four-*puzuo* bracket sets are installed on the rear side of the building (fig.2.1c). On the side elevation, only one five-*puzuo* set is used and others are four-*puzuo* ones (fig.2.1d).

The five-*puzuo* bracket sets on the façade seem quite identical to each other from the outside. They all have two-tier of *huagong*: the first tier supports a *guazigong* 瓜子栱 (the shortest bracket in a bracket set, parallel to the elevation of a building), and the second tier, without any projected *ang* 昂 (inclined cantilever), immediately supports *liaoyanfang* 撩簷方 (an eave purlin square in section, fig.2.1e and fig.2.1f). With regard to the three intercolumnar sets, however, the one on the middle is slightly different from those on the sides. Had the two front eave columns not been eliminated, the two side intercolumnar sets would have been regarded as the capital sets. Thus, the side intercolumnar sets (fig.2.1f) are closest to capital sets, which often projects a *huagong* inward and are connected to the interior column by a horizontal beam, which could be a *rufu* 乳枋 (two-rafter eaves-beam), or a *zhaqian* 箭牽 (one-rafter beam) depending on the case. Such a horizontal beam in this building is a *zhaqian* that passes the load of the bracket set to the interior column (fig.2.1f). On the other hand, the middle bracket set is

structurally an intercolumnar set in deed. It projects a cantilever *ang*-beam inward, called *angting tiaowo* 昂枅挑幹,⁷⁰ to carry the lintel which ties the interior columns (fig.2.1e). It is remarkable that there is no *ang* projecting at front of the bracket sets. Instead, only a member known as *angting tiaowo* is applied at the inside when necessary. Such a design, probably one of the characteristics of the Yuan timber structure in Sichuan, will be shown in other Yuan buildings discussed in the following sections.

From the north-south sectional view of the building, we can see that Main Hall of Lifengguan is basically a *tingtang* 廳堂 style building, because its interior columns, *wuneizhu* 屋內柱, are higher than the eave columns (fig.2.1g). Even though, interestingly, it has a layer of bracket sets on top of the interior columns bearing the ceiling, which resembles one of the features of a *diantang* 殿堂 style building. Consequently, this building is better considered a *tingtang* style building with some features of the *diantang* style.⁷¹

The front bay, in the north-south sectional view, is crossed by a *zhaqian* projected from the bracket set to the interior columns. The structure of the rear bay is very similar

⁷⁰ The member called *angting tiaowo* 昂枅挑幹 has a similar function as *xia'ang* 下昂, the down-*ang*, but it does not project at the front of the bracket set as does *xia'ang*. Zhang Shiqing divides the *ang*-relevant members into three groups: *xia'ang*, *shang'ang* 上昂 (upward *ang*-strut) and (*angting*) *tiaowo* based on their different bearing structures (Zhang Shiqing, 2002, 179-194). I shall discuss more details about these *ang*-relevant members in Chapter 4.

⁷¹ *Tingtang* 廳堂 and *diantang* 殿堂 are described in the *Yingzao fashi*. Nevertheless, since buildings in reality have more variations than the author of *Yingzao fashi* could ever predict, scholars such as Chen Mingda and Zhang Shiqing try to develop the theory and attempt to define a new style which is in-between *tingtang* and *diantang*. Chen Mingda called this in-between style as *Fengguosishi* 奉國寺式 (style at Fengguo Monastery, represented by its main hall, dated 1019) and Zhang Shiqing, based on his research on Jiangnan timber buildings, names the in-between one as *dianshi tingtang zao* 殿式廳堂造 (*dian*-style-*tingtang* construction). Further, Chen's in-between style is not exactly the same as Zhang Shiqing's *dianshi-tingtang zao*. I shall discuss further on this issue in Chapter 3.

to that of the front bay except for their different bracket sets. The middle bay, of two rafter lengths, has two beams: the lower one, *yueliang* 月梁, a crescent beam, ties one interior column to the other, and the top one, *pingliang* 平梁 (the upmost beam of a roof frame, two rafters in length, which supports a *shuzhu*, *shuzhu*, on its center to hold a *jituan* above), sustained by the interior columns through some bracket brackets, holds the *shangpingtuan* 上平樑 (upper purlin) upon both ends. A *shuzhu* 蜀柱 (dwarf pillar), standing on the center of the *yueliang* and has a bracket set on top helping the support for *pingliang*. Another *shuzhu* is built on the center of *pingliang* to bear the *jituan* 脊樑 (ridge purlin). It is noticeable that the bottom of the *shuzhu* on *yueliang* is pointed.

With regard to the whole timber structure of this building, the dimensions of its modular unit, *cai* 材, are 17.5 cm by 12 cm, which is roughly close to the ratio of 3 to 2, as the *Yingzao fashi* has stipulated for a standard *cai*, and is between Grade Six and Grade Seven.

It is probably a miracle that the Main Hall of Lifengguan survives today, since the building is atop a mountain and could easily be destroyed by wind, storm or earthquake. It was restored several times during the Ming-Qing period, but its authenticity as a Yuan structure is preserved. Its inscription proves it the earliest dated Yuan building that has been found in Sichuan to date.

2. Dongyuemiao東嶽廟⁷²

Dongyuemiao東嶽廟, the Temple of the Eastern Peak, is also called Damiao大廟, the Grand Temple, by natives because of its popularity as a place for religious activities around the Emei area. The temple complex, built along the hillside of Feilaigang 飛來崗, the Hill Flying From Afar, is two kilometers to the north of the county seat of Emei峨眉. The central axis of the complex is orientated east west and four major buildings along the axis. From east to west, there are Xingzhudian星主殿, which is the main gate of the temple complex⁷³, Jiumangdian九蟒殿 (the Hall of Nine Boas), Xiangdian香殿 (the Incense Offering Hall where incense burned), and Feilaidian飛來殿 (the Hall Flying From Afar, see fig.2.2a).

Feilaidian, named after the hill, is the earliest and most noteworthy building of the complex. The building we see today was constructed in 1327 of the Yuan period. Xiangdian was constructed in front of Feilaidian during the early Ming period in 1391, and Jiumangdian was built during the late Ming, in 1632. The construction activities continued during the Qing dynasty. Xinzhudian, Guanyindian 觀音殿 (a hall devoted to the bodhisattva Avalokiteśvara), and Piludian 毗盧殿 (a hall devoted to Vairocana Buddha) were finished by the end of the Qing period.

The architecture of Dongyuemiao synthesizes building forms from Yuan to Qing as

⁷² For a brief history of Dongyuemiao, see Pan 2001, 366.

⁷³ *Dian* 殿, literally meaning “hall”, is an unusual term for gate.

does the religious symbolism of the temple. In the Song-Yuan period, Dongyuemiao was built only for the worship of Taishan 泰山, the Eastern Peak. Later, Daoism and Buddhism penetrated the temple, one after another. This fact is attested by the construction of the buildings from Ming to Qing periods. Jiumangdian, the Hall of Nine Boas, was built during the Ming dynasty; its name *jiumang* clearly symbolizes the Daoist affiliation.⁷⁴ On the other hand, the halls built in the Qing dynasty that were dedicated to Avalokiteśvara and Vairocana Buddha strongly suggest its connection to Buddhism. The associations are in with *sanjiao heyi* 三教合一, the syncretism of the Three Teachings, which emerged in Yuan and was widely accepted in China after the Ming dynasty.⁷⁵ The multi-religious meaning of Dongyuemiao is also a very interesting topic for scholars of both architectural history and religious studies.

(1). Feilaidian 飛來殿

Built in Song and rebuilt in Yuan, the current version of Feliaidan is considered one of the most significant Yuan buildings within the Sichuan area. Not only because its

⁷⁴ The story of *jiumang*, the nine boas, is a local legend of Sichuan. Once upon a time, nine girls from Fengdu 豐都, the famous capital of the ghost, located in current Chongqing, transformed into nine boas after death to repay their obligation. The legend later evolves some relation with a Ming official, Yang Mengying 楊孟瑛, who was a native of Fengdu and once the governor of Hangzhou. He supervised the construction of Yanggongdi 楊公堤, the Dike of Yang, and saved the Xihu Lake from drying up. Then he is worshipped posthumously as Jiumangshen 九蟒神, the God of Nine Boas, in his hometown Fengdu. A couple of Daoist temples in Fengdu have a hall dedicated to the Nine Boas, referring either to the nine girls and Yang.

⁷⁵ Three Teachings issue in the Yuan dynasty, see Liu Ts'un-yan and Judith Berling's "The 'Three Teachings' in the Mongol-Yuan Period" in *Yuan Thought: Chinese thought and Religion under the Mongols*, ed. by Hok-lam Chan (1982, 479-503). For the Three Teachings during the Ming dynasty, see Kenneth KS Chen's "Recession and Decline: Ming and Ching Dynasties" in *Buddhism in China* (1964)

timber structure is highly refined and well preserved, but because scholars believe some Song architectural features are somewhat retained in this building.⁷⁶

The history of Feilaidian is quite legendary. According to a Qing version of Emei Xianzhi 峨眉縣誌 (Gazetteer of Emei County), Feilaidian was originally established by the Lord of Eastern Peak himself. The text reads:

Feilaidian is located five *li* to the northwest of the county seat. Its location is guarded by hills and surrounded by creeks. There are swamps and marshes everywhere except a mound that has risen. The mound, being clear and reclusive, is natural scenery. (On the mound,) the architecture is imposing and the shrines cluster, the name of which is *feilai*. The history of Feilaidian is unknown. However, according to the inscription on a stele of Taiping period (1324-1328)⁷⁷ and some stone tablets of Chunhua (990-994)⁷⁸ and Jingyou (1034-1038) periods, the location of the temple is chosen by the Lord (of Eastern Peak) himself. One night, it was windy and thundering. When it became clear, a little lofty hall was standing there. Since then, the people did not suffer from disease and pestilence, and they had a bumper harvest every year. Because of this, the native built a double-eave on the hall. The story of *feilai* is more than conjecture. It is known as the historical site of the town. Based on Qing gazetteers, the building was first built in Tang, renewed in Song and restored again in Dade(1297-1307) period of Yuan. In Hongwu(1368-1398) period of Ming, the aged hall was about to fall. In the Dingwei and Wushen year of Kangxi period, the native rescued the poor building and ran the temple again. It is lucky that the ancient timber is huge and of a good quality. They just replaced the rotten pieces. Though the weirdly color painting on the architecture is impossible to reproduce, there is no worry of rain.⁷⁹

飛來殿縣西北五裡。丘隅環護，谿澗盤旋。周圍皆湮隰，獨湧一阜，其中高朗絕塵，固天然勝景也。□宇巍巍，群祠簇湧，號曰飛來。

⁷⁶ Pan 2001, 366

⁷⁷ The stele was once found in the temple and was dated to 1327, the fourth year of Taiping 泰定 reign period of Yuan.

⁷⁸ The Chunhua stone tablet was also found in the temple and was dated to 993.

⁷⁹ Emei xianzhi 峨眉縣誌(Gazetteer of Emei County), *juan* 4, 1721(the sixtieth year of Kangxi period)

經始莫能究。但按泰定遺碑內述，淳化景佑間斷碣略雲，廟址神所自擇。嘗一夕，有風雷之變。遲明，小殿巋然。自是民無疾癘，年穀豐登。邑人因覆以重屋□字。□飛來非臆說，而古蹟於邑可知。再攷清誌，始建於唐，續鼎於宋，元之大德復培。於明洪武，歷久將傾。康熙丁未戊申邑人亟圖救敝而經營之。幸古材貞巨，但忝換其腐蝕。雖陸離難復，浸漏無虞矣。

In addition to the record in the gazetteer, the stele and stone tablets, mentioned in the gazetteer, provide us with more information of the building. The inscription on the Chunhua tablet, dated to 993, has a title that reads *Chongxiu be iji* 重修碑記, Stele Recording Reconstruction. Since the building was “reconstructed” in 993, an earlier version must have existed. The inscription on the Taiding stele confirms that there was an older Feilaidian before 933, but no one knows exactly what it was like. The message on this Yuan stele tells the story about how Feilaidian was completely rebuilt again during the early 1300s. Hence in summary, this building had at least three versions: one earlier than 933, one dated to 933 and one dated to 1327. The version of 1327 is the one we see today.

Besides, another two stelae produced in the Zhida至大 reign period of Yuan (1308-1311) and Wanli萬曆 reign period of Ming (1573-1620), respectively, were once available. The latter records the restoration activity during the late Ming. Unfortunately, all these stelae and tablets were demolished in the 1960s during the Culture Revolution. Only the 1327 stele can be partly pieced together by its fragments. Nowadays, people can

only learn those inscriptions from the rubbings.⁸⁰

Another piece of evidence related to the date of the building was found in 1984 when the building was under restoration. People discovered an iron mortise bolt on a corner beam with an inscription reading *Yuan Dade wuxunian* 元大德戊戌年, which means the second year of Dade 大德 reign period of Yuan (1298).⁸¹ Such a sentence inscribed on a construction member confirms that the building we see today should be an authentic Yuan structure.

Feilaidian is oriented east-west with its front entrance facing east (fig.2.2b). The hall has a five-by-four-bay rectangular plan, which is about 18 meters long and 13 meters wide, close to a ration of 3 to 2. The rectangular layout is a contrast to other Yuan buildings in Sichuan that have nearly square plans, and more similar to some Yuan buildings in the north, such as the structures at Yonglegong 永樂宮 in Shanxi, which have rectangular plans. This point will be further discussed in Chapter 4.

The dimensions of the bays, except for *dangxinjian* 當心間 (the central bay on the long side) are very close to each other. The *dangxinjian* is about five meters wide and the other bays are more or less three meters wide. The front entrance is an open porch and the back central bay is designed to be an exit. A technique called *yizhuzao* 移柱造,

⁸⁰ *Sichuan wenwuzhi* 四川文物志, 786

⁸¹ Pan Guxi 2001, 366

displaced-column style, is applied.⁸² Two front columns are eliminated and another two are relocated at the middle of the side bays (fig.2.2b). Therefore, the front porch became three bays instead of five, which makes the front entrance more spacious.

The ten-meter tall building is erected on a platform of 1.5 meters high with balustrades around and a ten-step staircase in front (fig.2.2c). It has a nine-ridged roof, covered by golden glazed tiles. Twelve bracket sets are evenly distributed under the eaves and it is quite remarkable to the visitors that two vivid Chinese dragons coil along the middle front eave columns.⁸³ Such columns are referred to as *chanlongzhu* 纏龍柱 (dragon column), a huge and arched column-top-tie, *da'efang* 大額枋, crosses the central bay to tie the front columns that are somewhat inclined. The height of both interior and eave columns slightly and gradually increases from the central bay toward the corners. Such a way of handling the columns is called *shengqi* 生起, “raising-up”, which is one of the characteristics of Song style architecture.⁸⁴

Concerning the roof structure, Feilaidian is a very typical eight-rafter *tingtang* 廳堂 style building(fig.2.2d). Based on the category of *tingtang* style in the *Yingzao fashi*, the roof structure can be categorized as *qianhou rufu yong sizhu* 前後乳枋用四柱, which indicates that a *rufu* is used both in the front and at the back of the building and there are

⁸² See Chapter 4 for more discussion on *yizhuzao*.

⁸³ Another two buildings that are famous for coiling dragons along the eave columns are Shengmudian 聖母殿 (Sage Mother Hall, 1023-1032) of Jinci 晉祠(the Jin Shrines) at Taiyuan 太原, Shanxi province, and Dachengdian 大成殿 (the Hall of Great Achievement) of Kongmiao 孔廟(the Temple to Confucius, 1483, repaired 1725) at Qufu 曲阜, Shandong province.

⁸⁴ *Shenqi* is defined in *juan 5* of the *Yingzao fashi*.

four columns (two are eave columns and the others are interior ones).

The front bay, represented in the east-west section, is crossed by a *rufu* that is projected from the back of the bracket sets under the front eave. The other end of the beam is inserted in the shaft of an interior column. A *shuzhu* stands in the middle of the beam and supports *xiapingtuan* 下平樑 (the lower purlin). A bracket set is also put on the interior column to carry the load of *zhongpingtuan* 中平樑 (the middle purlin) and rafters. A diagonal *zhaqian* 箭牽 is installed to reinforce the structure. The structure of the rear bay is quite similar to that of the front. The only two major differences are: first, the *yan'e* of the rear is much thinner than that of the front; second, the *zhaqian* projecting from the *xiapingtuan* toward the inside is downward curved instead of being diagonal.

A *sichuanfu* 四椽栿 (four-rafter beam) spans the distance between two interior columns. Two *shuzhus* are built on the four-rafter beam to carry *pingliang* 平梁. This *pingliang* is curved a little bit with a *shuzhu* 蜀柱 upholding the *jituan* 脊樑. Two *chashou* 叉手 (slanting struts used to support and stabilize the ridge purlin) were installed to compose a steady triangular composition.

Feilaidian has at least three major types of bracket sets. Each of them has a different modular unit along with various functions. Its *waiyan puzuo* 外簷鋪作, the bracket set sitting on the loop of eave columns (fig.2.2d), is a six-*puzuo* set with two *huagong* and one *ang*, the modular unit of which is 21.5cm by 14cm (fig.2.2e).

Interestingly, the upper tier of *huagong* is in shape of *jia'ang* 假昂 (a pseudo-*ang*). The first projected bracket is carved in shape of cloud, while the second tier, the *jia'ang* is carved into a dragon head, and the real *ang* on the top looks like an elephant's trunk.

With regard to the *waiyan puzuo* of Feilaidian, there are not many differences between *zhutou puzuo* 柱頭鋪作, the capital set, and *bujian puzuo* 補間鋪作, the inter-columnar set. The only distinction is that the capital set (fig.2.2e) has a two-rafter beam projected toward the inside and its *ang* does not support the *xiapingtuan* 下平樑 directly, while the intercolumnar set (fig.2.2f) has no beam on its inner tiers and its tail of *ang* props up high enough to support the *xiapingtuan* immediately.

The second type, *shencaonei puzuo* 身槽內鋪作, the interior bracket sets, are installed in lines along the two rows of interior columns (fig.2.2d) They help the interior columns and tie beams to support the load of the roof. Their structure can be described as *chonggong jixinzao* 重拱計心造, which means they have two layers of bracket brackets along the line of the columns, and a *guazigong* 瓜子拱 is built on the end of *huagong* (fig2.2g). The modular unit of this kind of set is 18 cm by 11 cm.

The last type of bracket sets that are noteworthy are those highly decorative ones built under a piece of ceiling board at the rear central bay of the building(fig.2.2h). We do not know for sure what this piece of *xiaomuzuo* 小木作(joinery and non-structural carpentry) was built for. It may be the canopy for a statue or part of a cabinet. However,

no record available can explain this. What we can see today is a highly complicated and exquisite object composed of five bracket sets which have three tiers of *huagong* with a *guazigong* on each tier. Its modular unit is the smallest of all, which is 13.5 cm by 8.5 cm. It is known that Feilaidian originally enshrined a copper statue of Dongyuedadi 東嶽大帝, the Lord of Eastern Peak, that was destroyed during the 1950s.

(2). Xiangdian 香殿

Xiangdian was originally located on the same platform as is Feilaidian. Considering the insecurity of potential fire, some experts moved it to its current place in the 1980s to keep it a distance from Feilaidian(fig.2.2a). Xiangdian is built for the worshippers who like to burn some incense to show their veneration or devotion to the Lord of Eastern Peak. Two fragments of inscription by craftsmen on the architecture suggest the date. One written in ink discovered on the front tie beam suggests that the building was first constructed in 1322.⁸⁵ Another inscription on one of the interior tie beams records that a general reconstruction took place during early Ming in 1391.⁸⁶ The

⁸⁵ The note reads:

The twelfth moon of the second year of Zhizhi reign period, Master Craftsmen, at Dongyuemiao

至治二年歲次壬戌十二月甲工大師東嶽廟

⁸⁶ The inscription reads:

Sincerely recorded, the reconstruction in the first moon of the twenty-fourth year of the Hongwu reign period

first inscription, written in Yuan period, in other words, suggests the Xiangdian's early Ming reconstruction retains some recycled architectural members left by the Yuan craftsmen. Such recycling of timber members is very common in Chinese construction history. Therefore, this building is basically considered a Ming building retaining Yuan styles.

Xiangdian is orientated east-west like Feilaidian (fig.2.2i), and its rectangular plan has three bays on its long side of 12.8 meters and two bays on its short side of 6.2 meters. It merely has ten eaves' columns and no interior columns were built. *Dangxinjian* 當心間, the central bay on the long side, is about twice wider than the side bays. The ratio of the long side to the short side is also close to 2 to 1.

From the diagram of the façade, we can see the building is built on a 0.42 meter high platform (fig.2.2j). Its height is about eight meters and it has a nine-ridged roof. No doors or walls are installed on the central bays, which makes it an easy gateway to Feilaidian. Besides the bracket sets on the capitals of the eave columns, there are three intercolumnar sets installed in the *dangxinjian* and one inter-columnar sets installed in each *cijian* 次間 (the bay next to the central bay). Since the span of *dangxinjian* is wide, a thick column-top-tie, *da'efang* 大額枋, is installed to secure the structure. Yet its structure is different from that of Feilaidian. For the sake of a wide span, the *da'efang* of Feilaidian was curved downward, while Xiangdian has a short post standing on its quite

straight *da'efang*. This is probably a difference between Yuan architecture and early Ming architecture.

Xiangdian has a very interesting system of bracket sets. Basically, it has two types of bracket sets: one is *waiyan puzuo* 外簷鋪作, the sets sitting on the eaves' columns to support the eave and the other is *shencaonei puzuo* 身槽內鋪作, which is on top of either interior tie beams or lintels to support the ceiling board (fig.2.2k and fig.2.2l).

With regard to *waiyan puzuo*, the capital sets are the same as the inter-columnar ones. They are of five-*puzuo* style and have two tiers of *huagong* both inside and outside. Two traversal brackets, *guazigong* 瓜子拱 and *mangong* 慢拱 (long bracket), are installed on the first tier of *huagong* on the outside (fig.2.2m). Such structure is called *jixinzao* 計心造 style (crisscross projection). This type of bracket sets is designed to uphold the eave purlins and the rafters. Since the slope of the eave is not steep, there is no *ang* installed. It is remarkable that two outside *huagong* and the first tier inside *huagong* are carved into shapes of animal heads, including dragons, phoenixes and elephants, resembling the bracket sets of Feilaidian. The result of this kind of decoration is that this small building looks somewhat luxurious.

Shencaonei puzuo, the interior bracket sets, which are designed to support the ceiling board, are smaller and simpler than the other sets; the modular unit of the interior sets is 17.5 cm by 12.5 cm while that of the eave sets is 18.5cm by 12.5cm. They are also

of five-*puzuo* style and have two tiers of *huagong*. However, since they have no traversal bracket on their *huagong*, they belong to *touxinzao* 偷心造 style (successive transverse projection) rather than *jixinzao* style (fig.2.2n).

Even though *diantang* style usually implies a large hall, the roof skeleton of Xiangdian can be defined as that of a *diantang* style,⁸⁷ because a ceiling board is installed (fig.2.2o). Because no interior columns are installed, a four-rafter *shunfuchuan* 順枋串(along-beam tie) spans through the width of the building and ties the front and back eave columns. Above the ceiling board, another four-rafter beam, *sichuanfu* 四椽枋 is installed to replace *pingliang*. A *shuzhu* stands on the *sichuanfu* sustaining the *jituan* and two wavy *chashou* on its side can pass some load of *zhongpingtuan* 中平樑 to the *shuzhu*.

3. Bao'ensi 報恩寺

Bao'ensi is located in a village called Gaofengcun 高豐村 that is about 40 *li* 裡 to the southeast of Meishan city. According to *Meishan xianzhi* 眉山縣誌 (Gazetteer of Meishan County), the monastery was first built early in the Tang dynasty and a restoration once took place in 1761, the twenty-sixth year of Qianlong 乾隆 reign period during the Qing dynasty.⁸⁸ It is said that the construction of Bao'ensi was sponsored by

⁸⁷ Criterion of the *diange* style will be discussed in Chapter 4.

⁸⁸ In *Meishan xianzhi*(1923), *juan* 13, it reads

a lay Buddhist surnamed Wang and who named this monastery Bao'en 報恩 (means repaying the obligation) to present a memorial to his mother.

Only the main hall is left at Bao'ensi today. Although the gazetteer does not reveal any construction activities at Bao'ensi in the Yuan dynasty, the architectural style of the main hall suggests that it is probably a Yuan building. Moreover, an inscription on a beam reads *taoding sinian* 泰定四年 (1327), which further validates the supposition of its dating to Yuan. Thereby, the main hall of Bao'ensi was built in Yuan in 1327 and restored in Qing, and also has an early version from the Tang period.

The plan of the main hall is oriented north-south with its facade toward the south (fig.2.3a). Its facade is about thirteen meters wide and has three bays and its east and west sides are 13.5 meters wide, each of four bays. Thus, the dimension of the plan is 13 by 13.5 meters, which is close to a square. Moreover, it is also noteworthy that its east and west sides are a little wider than its front side, which defers from the usual situation that the front elevation is longer than the side.

The *dangxinjian* on the façade is about two times wider than the side bays. Bays on the east and west sides, on the other hand, are fairly even, except that the first front bay is about one and a half time of the other bays. Four interior columns are installed in this building and a brick wall is built between the two columns on the rear row. Some statues

Bai'ensi is 40 *li* to the south of the county seat. It was built in Tang and restored in the 26th year of the Qianlong reign period of Qing.

報恩寺，治東四十裡。唐時建，清乾隆二十六年重修。

of folk deities stand in front of this wall.

From the picture of the façade (fig.2.3b), we can see that the main hall is built on a terrace of 0.9 meters in height and has a nine-ridge roof. The eave columns are basically 3.7 meters high and are slightly inclined inward and the height slightly and gradually increases from the central bay toward the corners. The *yan'e* 簷額 is thick and its section is almost round, which contrasts to its slim *pupaifang* 普拍枋 (a flat beam that rests directly on a column-top tie beam). On the façade, there are three intercolumnar bracket sets installed on the central bay and one on each side bay.

Basically, the building has two types of bracket sets: one has two tiers of *huagong* 華拱, and the other has no *huagong* but a horizontal and flat cantilever instead. According to *Yingzao fashi*, the former is of five-*puzuo* 鋪作, or five tier bracket set, while the latter is a quite simplified five-*puzuo* bracket set. The former sets are applied on the façade as intercolumnar ones while the latter play the part of the capital set all over the building. The design of the capital sets is somewhat bizarre. As one of the most important parts of the building, the capital bracket sets of this building are unusually simple and rough, lacking *huagang* or other brackets (fig.2.3c). In contrast to the intercolumnar sets that are finely produced, the capital sets seem as if they have been left unfinished; in fact, as far as I am concerned, this is not the case. The intercolumnar sets, resembling those of the main hall of Lifengguan in some degree, are of the *jixinzao* 計心

造 style and have no *ang*. The rear part of the intercolumnar sets project one layer of *huagong*, atop which is installed a *chonggong* 重栱 (a double-tier bracket set, parallel to the elevation of a building and composed of a *mangong* placed above a *guazigong*). A curvy *angting tiaowo* (cantilever *ang*-beam) is projected from the *mangong* to support the load of the *xiapingtuan* (fig.2.3d).

Moreover, among all the bracket sets is one intercolumnar type that appears very special (fig.2.3e). The very central intercolumnar set installed in *dangxinjian* is the same as the other intercolumnar ones except that it has in addition two oblique *huagong* of 45°angle. Such oblique brackets are called *xiegong* 斜栱, which is a decorative member with no functional purpose. The design of installing an extra, different bracket set with *xiegong* in the very center of the building is also found in Wulongmiao and Yong'anmiao.⁸⁹

The roof structure of the main hall, shown in figure 2.3g, consists of ten rafters. It is framed by four columns and crossed by a three-rafter beam, *sanchuanfu* 三椽栿, in the front bay, a five-rafter beam, *wuchuanfu* 五椽栿, in the middle bay and a *rufu* 乳栿 in the rear bay. The *sanchuanfu* in the front bay is supported by the capital bracket set at one end and is inserted into the shaft of the interior column by the other end. A *shuzhu* stands on one third of the beam to uphold the *xiapingtuan*. On top of this pillar, a slim *liangchuanfu* 兩椽栿 (two-rafter beam) is built to tie the interior column as well. Above

⁸⁹ See section 5 and 9 in Chapter 2.

this beam is a thick traversal tie beam, perhaps a *shunshenchuan* 順身串(along-purlin tie), which is also installed in the front interior columns under the *zhongpingtuan* to strengthen the structure. A curvy diagonal strut, a special term of which is unknown, is built in the front bay to connect two purlins of different levels. Such a member, also found at the rear part of the intercolumnar bracket sets (not shown in fig.2.3g), is applied at many other positions of the building to strengthen the structure between one purlin and another.

The structure above the five-rafter beam is noteworthy for the design of *yizhuzao*, displaced-column style. An interior column, illustrated in figure 2.3c, was moved one-rafter outward to provide a spacious worship area in the center of the building and the original four-rafter beam was extended to a span of five-rafters, atop which was installed a *shuzhu* playing the part of the interior column to support the purlin.

Generally speaking, the roof frame of this building is too simple—no bracket set is applied on the roof structure to pass load between the architectural members. There is a big contrast between the rough roof frame and the decorative and refined intercolumnar sets on *waiyan puzuo*. I suspect that the roof frame was largely changed during the restoration in the Qianlong period. Only the arrangement of the plan and the bracket sets of *waiyan puzuo* are credible remaining from Yuan.

4. Yong'ansi 永安寺

Yong'ansi, the Monastery of Eternal Peace, is located on Huangnigang 黃泥崗, the Hill of Yellow Earth, 45 kilometers to the southeast of Langzhong. The complex of Yong'ansi, built along the hill side, is about 4,000 square meters. Along its south-north axis are *shanmen* 山門, the main gate, Guanyindian 觀音殿, a hall devoted to the bodhisattva Avalokiteśvara, the side chambers, and the main hall (fig.2.4a). A large quadrangle is thus enclosed. Except for the main hall that is dated to Yuan, the other buildings of Yong'ansi were all built in the Qing dynasty.

The history of Yong'ansi can be learned from *Langzhong xianzhi* 閬中縣誌 (Gazetteer of Langzhong), published during the Qing dynasty. In the Gazetteer, a line reads:

Yong'ansi is 90 *li* to the east (of the county seat of Langzhong). It was established in Tang and restored during the Zhiping reign period of Song, the Zhizheng reign period of Yuan and the Jiajing reign period of Ming respectively.⁹⁰

永安寺在東九十裡。唐建。宋治平、元至正、明嘉靖遞有培修。

A very similar record is also available in the inscription of a Qing period stele called *Jinshanbei* 禁山碑 found in the monastery.⁹¹

⁹⁰ Xu Jiyong 徐繼鏞, *Langzhong xianzhi*, juan 2, 1851

⁹¹ *Jinshanbei* 禁山碑 is a special kind of stele built to warn people against deforestation. On this stele, there is a line that reads:

Yong'ansi was first built in early Tang and was restored in Song, Yuan, Ming and Qing dynasties, respectively.

Moreover, from earlier textual evidence, we can learn that “Yong’ansi” is not the original name of this monastery. A stele dated to 1548, the twenty-seventh year of Jiajing 嘉靖 reign period of Ming, has an inscription called *Chongxiu chici benjueyuan ji* 重修敕賜本覺院記 (the Record of the Reconstruction of Benjueyuan Granted by Imperial Order). The legible part is as the following:

Benjueyuan is about sixty *li* east of Langzhong. It was established by a Song monk named Chulinzhi. It was built under an imperial order in 1067, the fourth year of the Zhiping reign period of Song. In the second year of the Zhishun reign period of Yuan, the main hall was expanded. ... During the Hongwu period of Ming, an imperial monk, whose name is Li Yongyong and whose monastic title is Junxian, once restored the monastery. ... In 1547, the Dingwei Year during the Jiajing reign period, (due to the poor condition of the monastery,⁹²) a monk whose monastic title was Baofeng was anxious day and night. Because of this, he donated his legacy and recruited some craftsmen. Then the buildings and other monuments were erected one after another. The buildings, the pavilions, the corridors, the platforms and other structures were renovated as if they were new.⁹³

本覺院地去閬東六十裡許，先宋僧處林之所創建也。宋英宗治平四年奉敕褒修，元文宗至順二年式廓增大殿。.....我朝洪武敕僧姓李諱永用號君賢者嘗補葺之。.....嘉靖丁未歲，僧號寶峰者夙夜惶惶，思為此懼，乃敬捐衣鉢，募工匠，土木金石次第畢舉，樓閣廊宇，門殿臺砌，煥然而更新之。

The quotation above indicates that the monastery was originally called Benjueyuan 本覺院 until the Qing dynasty and a major restoration was carried out during Ming.

永安寺建于唐初，宋、元、明、清均有培修。

⁹² Since some of the previous text is missing, this part is added by the author herself based on the context.

⁹³ Zhu Xiaonan, 1991, 67.

Besides the stelae and gazetteers that record the history of Yong'ansi, an inscription written in ink found on a four-rafter beam of the main hall confirms its architectural date of Yuan. Although some characters are missing in this inscription, we still can recognize the characters that bear the date, *Dayuan Zhishun sinian* 大元至順四年, the fourth year of Zhishun reign period of Yuan, which is the year of 1333(fig.2.4b).⁹⁴

In summary, Yong'ansi, originally called Benjueyuan, was first built in early Tang. Supervised by some prestigious monks, the monastery was restored several times during Song, Yuan, Ming and Qing. The main hall, originally small, was expanded to its current size in 1333 during the Yuan dynasty. Although several restorations took place during Ming and Qing, because of a Yuan inscription that survives on its main beam, the main hall is considered a Yuan building, while other buildings, such as the main gate, the Hall of Avarokitesvara and the side chambers, are dated to the Qing dynasty.

The main hall of Yong'ansi has a three-by-four-bay plan with the three-bay façade facing the south (fig.2.4c). *Dangxinjian*, the central bay on the façade, is about twice wider than the side bays. On the other hand, the dimensions of the four bays on the side are quite uneven and irregular. The southernmost bay, serving as the portico, and the northernmost bay are both 2.3 meters wide. The bay next to the portico bay is more than 7 meters, very close to that of the *dangxinjian*. The bay in front of the northernmost bay

⁹⁴ See *Sichuan wenwuzhi* (2005,787). The other characters are:

大元至順四年太歲癸酉九月壬辰朔二十八日乙未當院至盟比丘寶傳專管修造小師悟
一同師第□□□□□囊資□改鼎新創

on the side is about 3.6 meters, which is roughly one and a half time of the first and fourth ones. Like the Main Hall of Bao'ensi, the layout of the building can be considered a square for the reason that each of the side is about 15 and a half meters.

The façade shows that the main hall, with a nine-ridged roof, was established on a two-storied platform (fig.2.4d). Four front eave columns stand on the lower level, which is 0.65 meters higher than the ground level, while the major part of the building is built on the upper level, which is 1.8 meters above the ground. The upper level and the lower level are connected by a six-step staircase. This unusual two-storied platform solves the constructive problem caused by uneven ground.

The front eave columns, built on the lower level, are about 5.47 meters high and their diameters are 50 centimeters. The column-top tie beam⁹⁵ is slightly curved downward to span the *dangxinjian* of more than 7 meters wide. In order to be strong enough, the column-top tie beam is made of a round log, the diameter of which is 40 centimeters. The *pupaifang* 普拍枋, the architrave atop the column-top tie beam, is flat and slim as usual. An uneven filler board, which is known as *dianban* 垫板 (filler board), is installed between the column-top tie beam and *pupaifang* to fill in the space between these two tie beams.

With regard to the bracket sets of this building, only those on the façade are well preserved. There are six bracket sets in total on the façade: two corner sets, two capital

⁹⁵ It is unknown that whether this tie beam is *lan'e* or *yan'e*.

sets (fig.2.4f) and the two intercolumnar sets of the *dangxinjian* (fig.2.4e). All the bracket sets under the front eave are six-*puzuo* sets. They project one *huagong* 華拱, which is in disguise of a *jia'ang*, and two tiers of *ang*.⁹⁶ On both *huagong* and the first tier *ang* is a traversal bracket, appearing like a pair of bird's wings, called *yixinggong* 翼形拱, wing-shaped bracket.

The sectional view of the capital set displays the structural function of the bracket sets (fig.2.4g). The rear part of *huagong* on the capital set directly supports the *zhaqian* 筭牽, and an *angwei tiaowo* 昂尾挑斡 (the inner end of an *ang* inclining upwards to carry a purlin) is extended to the end of the *sichuanfu* 四椽枋, the main beam of the building. The modular unit *cai* of the bracket sets is about 19 cm by 13 cm, approximately the *cai* in Grade V according to the *Yingzao fashi*.

The design of the bracket sets of this building is neither complicated nor highly decorative. It is unique because it seems to have three *angs*, and one of them is not a genuine *ang*. It is said that this kind of bracket set is very popular and influential in Sichuan during the Ming and Qing periods.⁹⁷ I do not know this for sure, but it is apparent that the bracket sets of the main hall in Yong'ansi are nothing like those in Lifengguan 醴峰觀, Wulongmiao 五龍廟 or Yong'anmiao 永安廟.⁹⁸ Though these three

⁹⁶ According to Zhu Xiaonan (1991,68) and other publications about Yong'ansi, scholars define the second tier *ang* as a pseudo-*ang*, which is actually a *shuatou* 耍頭. However, since the second tier *ang* is not parallel to the *huagong*, as *shuatou* is, I believe this is still an *ang* instead of a *shuatou*.

⁹⁷ Zhu Xiaonan 1991,68

⁹⁸ See section 1, 5 and 9 in Chapter 2.

temples are not far from Yong'ansi, their bracket sets do not have any *ang* at all, so that I was surprised when I first saw the main hall of Yong'ansi. I shall explore the reason or explanation for this issue in future chapters.

The roof skeleton of Yong'ansi, a ten-rafter structure, is also somewhat extraordinary (fig.2.4i). The first and last bays are crossed by the above-mentioned *zhaqian* 筴牽, supported by the eave columns and inserted in the shaft of the interior column. The structures of the two middle bays are not symmetrical. The tallest interior column divides the central space of the building into two areas. The rear one where is installed an altar to enshrine statues of Buddhas, is crossed by *liangchuanfu*, while the front one, spanned by a *sichuanfu*, seems to be designed for worship because of its spaciousness. *Shuzhus* 蜀柱 stand on the *rufu* and *sichuanfu* to uphold the purlins, and the bottom of the *shuzhus* is carved to a point. The tallest interior column supports *pingliang* 平梁 that penetrates a capital block.

It is noteworthy that some big interior tie beams, *shunshenchuan* 順身串, are added to this building to reinforce the structure. *Shunshenchuan*, literally meaning a tie beam parallel to the “body” of the building, usually connects two interior columns beneath and parallel to any purlins except for eave and ridge purlins. Since the dimension of the middle bay is wider than 7 meters, these tie beams are built to fix the vertical members, such as interior columns and *shuzhus*. These beams of *shunshenchuan* are all made by

round logs, the diameters of which are between 30 to 50 centimeters. Moreover, some four-*puzuo* bracket sets were installed on one of these tie beams to increase supporting points for the *xiapingtuan*(fig.2.4h). The application of such thick interior tie beams is a very typical feature of Yuan architecture in north China. It enables a spacious worshipping area without building more interior columns.⁹⁹

In addition to the timber structure of Yong'ansi that survives from Yuan, people were able to appreciate Yuan sculptures and wall paintings in the main hall before the Culture Revolution. Only the central altar that used to host the Buddhist statues remains today. Tao Mingkuan's article, published in 1955,¹⁰⁰ records what he and his colleagues saw in this building in 1950s.

Tao's article suggests that on the central altar were the statues of Buddha Dipamkara, Buddha Sakyamuni and Buddha Maitreya. At the back of the three Buddhas was a statue of Amitaba, facing the back of the hall. Bodhisattvas of Ten Stages were along the east and west walls, five Bodhisattvas on each side standing on one base together. A six-armed Bodhisattva¹⁰¹ stood next to each window on the side bays of the façade.

On the east and west walls, images of *Tianlong babu* 天龍八部, Eight Divisions of Gods and Dragons, were painted in color. An inscription dated to the 1348 was once on

⁹⁹ Yuan architectural features in the north will be discussed in Chapter 4.

¹⁰⁰ Tao Mingkuan 1955, 100

¹⁰¹ It is not known who this six-armed Bodhisattva was. It is probably one of the manifestations of Guanyin.

the east wall. It reads:

The abbot of this monastery decided to construct a place for monks, with Master Wuzhen and Wuli, and their apprentices Yongyong, Yongbao, Yongjian and Yonghe.... We use the meritorious ornamentation to seek the *up āya* for the wise and the stupid. Since the fall of the Guiyou Year (1333), in order to provide a place for worship, we were about to reconstruct the main hall and then we started. We sincerely intended to protect the building. Before our work was half done, the master passed away. Now that the restoration was finished, we should certainly celebrate. The timber and earth work has been accomplished and the sculptures and color paintings are all finished. ... Wuzi Year (of the Zhizheng reign period, 1348)

當院住山修造比丘寶傳，小師悟真、悟理，師孫永用、永寶、永堅、永和.....以功德莊嚴，啟孜乞智愚方便。粵自癸酉之秋季，欲修大殿以興工，供啟願。誠用求加護。創業未半而上足遷化，營修以備而慶賀當陳。內外土木之作已周，塱粧彩畫之功俱畢.....至正戊子□□□□□□□□。

This inscription, if true, further approves that the main hall was expanded in 1333. It also tells us that the sculptures and wall paintings in the building were finished fifteen years later than the architecture was.

5. Wulongmiao 五龍廟

Wulongmiao, the Temple of Five Dragons, is located at a village called Baihucun 白虎村 that is 30 kilometers to the south of Langzhong. The temple originally was the public activity center for the natives. The complex of the temple consisted of a main gate, a drama stage, two side chambers and the main hall called Wenchangdian 文昌殿, the hall

dedicated to Lord Wenchang.¹⁰² Except for the main hall, all the other buildings were pulled down during the 1960s. A stele found in Wenchangdian has an inscription with a brief description of the hall's history. The text is titled, *Chongxiu Wenchangge gongdebei*重修文昌閣功德碑(Stele on the Merits and Virtues of the Reconstruction of Wenchang Pavilion).¹⁰³ There is a line reading:

Wenchang Pavilion was first built in the Tang dynasty. It was reconstructed in the third year of the Zhizheng reign period of the Yuan dynasty, (which is year 1333).¹⁰⁴

文昌閣始建於唐，元至正三年重修。

Since no evidence of later destruction or renovation is found, we assume that the temple traces to the Tang period and the current building is a Yuan monument. Its architectural style seems to support the Yuan date.

The plan of Wenchangdian is orientated north-south with its front entrance facing the south (fig.2.5a). It has a three-by-three-bay plan, the dimensions of which are 9.8 by 9.5 meters. Although the front is a little wider than the sides, the layout is very close to a square. It is also noteworthy that *dangxinjian*, the central bay on the façade, is one and a half times each side bay, while the dimension of the central bay on the sides are almost twice the side end bays.

¹⁰² See section 2.8 for an introduction of Wenchang cult.

¹⁰³ The name of the building dedicated to the Lord of Wenchang has two versions. One is Wenchangdian 文昌殿, the hall of Wenchang, which is inscribed on the horizontal board hanging in the porch of the building. The other name is Wenchangge 文昌閣, the Pavilion of Wenchang, which is inscribed in this stele. I shall use the first name here.

¹⁰⁴ *Sichuan wenwuzhi* 2005,785

The building has sixteen columns in total: twelve are eave columns and four are interior columns. Neither *yizhuzao* 移柱造 (column displacement) nor *jianzhuzao* 減柱造 (column elimination) is employed. The front three bays, which are semi-open, can be considered the porch of the building. The main entrance is installed between two front interior columns, with two windows on each side. Brick walls of one foot thick are constructed on the rear, east and west sides of the building.

Wenchangdian has a nine-ridged roof and stands on a two-storied terrace, resembling the Main Hall of Yong'ansi (fig.2.5b). The four front eave columns standing on the lower level, which is 1.7 meters high and in fact a natural mound with rocks laying on the surface. The rest of the building is constructed on the second level that is 0.65 meter above the lower level and is made of irregular stone blocks. Two staircases are at the center to connect the ground and the two stories of the terrace (fig.2.5k). The column-top-tie, *yan'e* 簷額, is made of a thick round log and is curved downward. The *pupaifang* 普拍枋, the architrave atop *yan'e*, is 10 centimeters thick and the edge of which is carved into lotus buds (fig.2.5c). A *dianban* 墊板, the filler board, is installed between the *yan'e* and *pupaifang* to fill in the unwanted space.

The bracket sets of Wenchangdian can be categorized into two groups: those on the façade which are sophisticated and elaborated and those on the side and rear elevations which are simple and modest. There are a total of five bracket sets installed on the front

elevation: two corner sets, two capital sets and one inter-columnar set.¹⁰⁵ The capital sets, which are built on two middle eave columns, are six-*puzuo* bracket sets (fig.2.5h and fig.2.5i). They have three projected brackets without any *ang*. On the first tier of *huagong* is a *yixinggong* 翼形栱, and on the second tier of *huagong* is one traversal bracket and two *xiegong* 斜栱, each at a 45 degree angle to the facade. These *xiegongs* hold the eave lintel, *liaoyanfang* 撩檐方, together with the third tier of *huagong*. For the rear part of the capital set, since there are no bracket brackets or blocks at all, it is relatively simple. A triangle plank composed of three boards buttresses a *zhaqian* installed on top of the bracket set.

There is only one intercolumnar set on the façade, which is installed in the middle of the central bay and its front view is partially covered by the wooden plaque (fig.2.4g). The intercolumnar set, more complicated than the capital set, has three tiers of *huagongs*. The first tier supports a *chonggong* 重栱 and two layers of *xiegong*, each at a 45 degree angle to the façade. These two *xiegongs* help the middle tier *huagong* support the traversal bracket on the second tier that also projects five brackets forward: three are orthogonal and two are oblique. The rear part of the inter-columnar set is similar to that of the capital set except that instead of bearing a horizontal *zhaqian*, the intercolumnar set has an *angting tiaowo* (cantilever *ang*-beam), fixed and extended to bear the *xiapingtuan*. A triangle wedge is inserted between the board projected from the capital block and the

¹⁰⁵ The diagrams of the bracket sets of Wenchangdian are not based on real dimensions.

cantilever *ang*-beam to reinforce the structure (fig.2.4e).

The corner set also has a complicated structure. From its bottom view, we can see bracket arms from different directions are interwoven, with some *xiegongs* projecting at the sides (fig.2.5d and fig.2.5.f). The bracket sets on the rear side of the building are extremely simple compared to the bracket sets on the façade. It is crossed by a *zhaqian* from inside and only projects one tier of *huagong* to support the eave lintel. This kind of bracket sets is considered a four-*puzuo* set and is also called *doukoutiao* 斗口跳, which means one tier projects from the opening of the capital block(fig.2.5j).

It is remarkable that the bracket sets of Wenchangdian do not have any *ang*. Considering that this is also found in Lifengguan (fig.2.1c-f), Bao'ensi (fig.2.3c), Qinglongsi (fig.2.6c-h) and Yong'anmiao (fig.2.9c-h), this is probably a characteristic of Yuan architecture in Sichuan. It will be discussed in later chapters.

The roof structure and interior of Wenchangdian are relatively uncomplicated, with two interior columns dividing the hall into three bays (fig.2.5k). The front and rear bays are crossed by a *zhaqian* 筓牽 and a *sichuanfu* 四椽栿 spans the middle bay. Two *shuzhus* 蜀柱 stand on the *sichuanfu* to support the top beam, *pingliang* 平梁, where another *shuzhu* upholding the *jituan* is located. All the *shuzhus* have a pointed bottom.

The *shuzhu* on the *pingliang* is crossed by a *shunjichuan* 順脊串, a tie beam parallel to the *jituan* to strengthen the roof skeleton. The interior columns are also crossed

by *shunshenchuan* 順身串, which connects two interior columns under the *zhongpingtuans* 中平櫓. The *shunshenchuan* is made of a thick round log and is curved downward a little. Although the roof structure of this hall is simple, the application of the tie beams helps to reinforce the whole timber frame.

6. Qinglongsi 青龍寺

Qinglongsi, the Black Dragon Monastery, is located at the village called Qinglongcun 青龍村 20 kilometers to the northeast of the Lushan county seat and is built on the west riverside of Lushan River 蘆山河. According to the inscription carved on its *menzhen* 門碇, the stone pivot bearers installed on each side of the main gate, Qinglongsi was constructed in 1344, the fourth year of Zhizheng 至正 reign period of Yuan.

The monastery initially enshrined statues of Buddhas of the Past, Present and Future, and sculptures of *shiba luohan* 十八羅漢, the Eighteen Disciples of the Buddha. Unfortunately, except for the architectural structure of the Main Hall, all the buildings and sculptures in the monastery were demolished during the early 1950s.¹⁰⁶ Since the Main Hall had been used as a classroom for the local school, it has not suffered any terrible fate yet.

Several reliable sources help prove that the Main Hall of Qinglongsi is a Yuan building. First is an inscription on one of the stone pivot bearers of the Main Hall

¹⁰⁶ *Sichuan wenwuzhi* 2005, 784

reading *Dayuan Z hizheng j iunian* 大元至正九年, which means the ninth year of the Zhizheng reign period of Yuan, the year of 1349. Second, four pieces of roof tiles have been uncovered which bear dates of the Yuan period.¹⁰⁷ Although we do not know the exact year when the Main Hall was completed, it is unquestionable that the Main Hall is dated to Yuan and construction probably took place from the late 1330s to early 1350s.¹⁰⁸

The restorations of the Main Hall took place during both the Ming and Qing dynasties, according to the inscriptions on the roof tiles, some of which can be dated to the Jiajing 嘉靖 reign period(1507-1566) of Ming while others can be dated to the Chongzhen 崇禎 reign period(1628-1644) of Ming. The latest restoration was held and supervised by the Cultural Heritage Bureau of Sichuan in 1990 when the platform was reinforced and timber structure was adjusted.

The Main Hall is oriented north-south and its façade faces the south (fig.2.6a). The layout of this building is very close to a square, the dimensions of which are 15.1 by 14.95 meters. Its south side and north sides have three bays and are a little wider than the east and west sides. The central bay on the south side is almost twice wider than the side bays, while the dimensions of the four bays on east and west sides are almost identical. There are a total of eighteen columns in this building, fourteen eave columns and four

¹⁰⁷ These dates, in Chinese characters, are *Zhiyuan yinian* 至元一年, the first year of the Zhiyuan period, *Zhiyuan liunian* 至元六年, the sixth year of the Zhiyuan period, *Zhizheng shi'ernian renchen* 至正十二年壬辰, the twelfth and Renchen year of the Zhizheng period, and *Zhizheng shisan* 至正十三, the thirteenth (year) of the Zhizheng period, which are 1336, 1340, 1352 and 1353 respectively.

¹⁰⁸ The inscriptions mentioned in this paragraph are recorded in *Lushan Qinglongsi dadian baohu gui Hua* 蘆山青龍寺大殿保護規劃 (Conservation Planning for the Main Hall of Qinglongsi at Lushan)2007, 2

interior columns. The columniation of this building is rather normal; no column was removed or relocated. An altar of seven meters long and two meters wide is installed in front of the timber board between the rear interior columns.

The building has a nine-ridged roof and is about 8.6 meters tall (fig.2.6b). It is constructed on a 0.8 meters high platform. Compared to *cijian* 次間, the side bays of the front facade, the *dangxinjian* is considerably wider. Three intercolumnar bracket sets are installed in the central bay while only one inter-columnar set is installed in each side bay. Therefore, in order to strengthen the structure of the central bay, a round and thick *yan'e* 簷額, slightly curved downward, is built to span the width of more than seven meters. The *yan'e* in the side bays are of the same thickness as that in the central bay. However, since the height of the eave columns are slightly and gradually increased from the central bay toward the corners, the space between the *yan'e* and *pupaifang* 普拍枋, is bigger in the side bay than in the central bay, so a *shuzhu* is installed in the side bay between the *yan'e* and *pupaifang* to reinforce the structure.

There are totally five styles of bracket sets on the façade of the building: the capital set (fig.2.6f), the corner set (fig.2.6d), and three different styles of inter-columnar sets (fig.2.6c and fig.2.6d). The capital set that has two tiers of *huagong* is a five-*puzuo* set. The first tier *huagong* supports a *yixingong* 翼形栱, while the second tier *huagong* sustains the eave lintel directly with no traversal bracket (fig.2.6f). With regard to the

interior part of the capital set, as the sectional view indicates in figure fig.2.6g, the first *huagong* supports a *chonggong* 重栱, and a *rufu* 乳栱 is inserted into the second tier. It is remarkable that no *ang* is applied on this structure.

In the *dangxinjian* are installed three intercolumnar sets that belong to two types (fig.2.6c). The one in the middle is almost the same as the capital set, except that a diagonal beam, instead of a two-rafter horizontal beam, is inserted into its second tier from inside (fig.2.6e). The other two intercolumnar sets on the side are quite different from the middle one. The side intercolumnar set in the central bay has two tiers of *huagong*, which is orthogonal, and two tiers of *xiegong* which project 45 degree angle from each side of the orthogonal *huagong*. The third type of intercolumnar set is the one installed in the *cijian* (fig.2.6d). It is the same as the middle intercolumnar set in the *dangxinjian* except that the *yixinggong* of the former is replaced by a regular *guazigong* in the latter to support the lintel above. The bracket sets on the rear side of the building is very simple (fig.2.6h). A *rufu* crosses the eave column to support the eave lintel (*liaoyanfang* 撩檐方) and one *huagong* is projected outward and two are projected toward the inside.

The roof structure of the Main Hall is interesting. From the north-south sectional view of the building, we can see that a series of thick diagonal beams are built to connect one purlin with another, presenting a strong inverted V-shaped frame (fig.2.6i). It seems

that these diagonal beams are made of un-hewn timber, which is said to be one of the characteristics of Yuan timber architecture technique.¹⁰⁹ Similar diagonal members made of un-hewn timber can also be found in some Yuan architecture located in Shanxi or Jiangnan area.¹¹⁰ In addition to these diagonal beams, the front and rear bays of the building are spanned by a *rufu* and the middle bay is crossed by a *sichuanfu*. Above the *sichuanfu*, there are two *shuzhus*, which sustain the *pingliang* 平梁.

The members called *chuan* 串, which means the tie beam installed under and parallel to the purlins to connect *shuzhus* or interior columns, are employed in this building. One *shunjichuan* 順脊串, the tie beam under the *jituan*, crosses the *shuzhu* on the *pingliang*. Several *shunshenchuan* 順身串, the tie beams under the *shangpingtuan* 上平樑 and *zhongpingtuan* 中平樑, cross the *shuzhus* and the interior columns (see fig.2.6i and fig.2.6j). Given a central bay of large span, these tie beams are very helpful for reinforcing the timber structure.

7. Pingxianglou 平襄樓

Pingxiang Pavilion is located in the city of Lushan which is in southeastern Sichuan. This two-storied timber building is the centerpiece among the complex of Jianghouci 姜侯祠, the Shrine of Marquis Jiang, which was built to memorialize Jiang

¹⁰⁹ Pan Guxi2001, 435

¹¹⁰ See further discussion in Chapter 4.

Wei 薑維, a famous general of Shu Han 蜀漢 during the Three Kingdoms era(220-280).¹¹¹ The Pavilion is named after Jiang Wei's honorific title, Pingxianghou 平襄侯, Marquis Pingxiang.

The earliest record of Pingxiang Pavilion is found in a Ming book, *Shuzhong mingshengji* 蜀中名勝記(Records of Places of Interest in Sichuan), by Cao Xuequan 曹學佺. In the entry for *Luzhou* 蘆山, it records:

In the 23rd year of the Shaoxing reign period, (1153 of the Southern Song), Xu Hongzhong¹¹² wrote: “The native people commemorated Boyue (the style name of Jiang Wei) with a temple. The horizontal inscribed board on the temple reads *pingxiang* (the honorific title of Jiang Wei).¹¹³

紹興二十三年，徐閔中記：“土人祀姜伯約，有廟。額曰，平襄。”

Informed by this quotation, people believe that the building mentioned by the Song magistrate Li Hongzhong is the building that we see today.

Nevertheless, the building is not explicitly identified as a Song building by modern scholars because there is still a lack of other solid evidence. Given that the Pavilion not only has served as the shrine of Jiang Wei, but also as the activity center of the county

¹¹¹ Jiang Wei (202 - 264), Zhuge Liang's 諸葛亮 student and successor, was a military general and later regent of Shu Han during the Three Kingdoms era of China. Boyue 伯約 is his style name and Marquise Pingxiang 平襄侯 is his honorific title. See Jiang's biography in *juan* 44, in *Sanguozhi* 三國志, The Records of Three Kingdoms, by Chen Shou.

¹¹² Xu Hongzhong was supposed to be the county magistrate of Lushan during the Shaoxing period. Nonetheless, *Lushan xianzhi* 蘆山縣誌 (Gazetteer of Lushan), written in the Qing dynasty, points out that his family name was Li 李 instead of Xu. I shall use the name Li Hongzhong later in this study.

¹¹³ Cao Xuequan 1547-1646, *juan* 14

since the Song dynasty,¹¹⁴ inevitably, the Pavilion was restored or renovated time after time to host yearly events through the Yuan, Ming and Qing dynasties. Therefore, without any further proof, such as an inscription of date on a major beam, the building cannot be considered a *Song* building.

Restoration of the building was frequent. Liu Dunzhen劉敦楨, one of the most prominent architectural historians in China, investigated this building in the early 1940s. He discovered an inscription on several pieces of roof tiles, which read *Zhengtong shinian*正統十年, the tenth year of Zhengtong reign period of the Ming dynasty(1445). Liu could not date the building to an exact year but he confirmed that the building was repaired in 1445. Later on, another Ming inscription and a piece of Qing stele recording a restoration were uncovered and verify the restoration activities during the Ming-Qing period. Although it is generally agreed that the building was first built in Song, its structure has been somewhat altered due to the restorations from time to time.¹¹⁵

In summary, it is quite difficult to date the architecture of Pingxiang Pavilion to a specific dynasty. On the basis of the fact that in 2006, the State Administration of Cultural Heritage (SACH) of China announced Pingxianglou as a state heritage building and dated it roughly to the Yuan period, I classify this building into the Yuan group.

¹¹⁴ The cult of Jiang Wei was very popular around Lushan County. It is said that Jiang Wei died on the fifteenth day of the eighth moon, which is the Mid-autumn Day. Therefore, during the Mid-autumn Festival every year, the local people would set up stage and color building models around the Pingxiang Pavilion. This became one of the major social events of Lushan.

¹¹⁵ *Sichuan Lushan Pingxianglou baohu guihua* 四川蘆山平襄樓保護規劃 (Conservation Planning for Pingxianglou, Lushan, Sichuan) 2007,1

Nevertheless, further studies will indicate how authentic it is as a Yuan monument.

The layout of the Jianghouci complex is represented in figure 2.7a. The present shrine is actually a park open to the public: there is a pond, some groves and an outdoor tea house. However, we can still see the three major buildings on its center axis, which are, from south to north, the drama stage, Pingxianglou, and Jianggongmiao 薑公廟, the Temple of Lord Jiang. It is said that the drama stage was not built until the Qing period and Jianggongmiao is dated to 1550, the 29th year of the Jiajing 嘉靖 reign period of Ming.¹¹⁶ The Temple of Lord Jiang enshrines a wooden statue of Jiang Wei and Pingxiang Pavilion functions as the sacrificial hall.

Pingxiang Pavilion is a two-storied building with a nine-ridged roof and has three layers of eaves in total (fig.2.7b and fig.2.7c). The second eave layer that is not integrated to the main structure of the building is only attached to protect the balcony and balustrade on the second floor from wind or rain and does not suggest a real storey. The Pavilion is built on a platform of 17.5 centimeters and the building itself is about eleven meters high in total.

The front elevation of the Pavilion shows that, in the central bay of the ground level, the thick and round *lan'e* 闌額 is slightly curved downward because the central bay is much wider than the side bays. Instead of installing *dianban* 墊板, a filler board, into the space between *lan'e* and *pupaifang* 普拍枋 as craftsmen had done to the some other

¹¹⁶ Sichuan Lushan Pingxianglou baohu guihua 2007,4

Yuan buildings, craftsmen of Pingxianglou installed two tiny pillars, each under the inter-columnar set, to strengthen the tie beams. Another example of this structure is the Main Hall of Qinglongsi (see fig.2.6b). Tiny pillars of the same function are also found in Xiangdian of Dongyuemiao at Emei, which is unquestionably a Ming building (fig.2.2j).

The plan of Pingxianglou is oriented north-south with entrances on both the north and south sides (fig.2.7d). A staircase on its south side suggests that it is the “front” entrance. The front side is about fourteen meters wide and has five bays while the side elevation is about ten meters wide and has four bays. The fact that its front is 40 percent wider than its side separates Pingxianglou from most of the other Yuan buildings discussed thus far. It is clearly that similar to Feilaidian and Xiangdian in Dongyuemiao (see fig.2.2b), the plan of this building is rectangular, whereas squarish plan is a major characteristic of most other Yuan buildings in Sichuan. This is probably because the Pavilion and Feilaidian are both such large-scale buildings.

It is also interesting that the plan of Pingxianglou is symmetrical on both the east-west and north-south axes. On its long side, the central bay is six meters wide, three times wider than the side bays of the front and back, all of which are about two meters; and each bay on the long side has a two-panel door. Along the short side, the two middle bays are three meters wide and the dimensions of the end bays are both two meters.

There are no interior columns in line with the center columns on the east and west sides, so that a large space is in the center of the building.

The bracket sets of this building appear very standardized. There are a total of thirty-eight in this building. Twenty-two are built on the ground floor, including four intercolumnar sets, two on each central bay of the south and north sides. The other sixteen are built on the second floor right under the top eave, four of which are intercolumnar sets, two on each central bay of the south and north sides. The style of both the capital and intercolumnar sets is nearly identical when viewed from the outside (fig.2.7e and fig.2.7g). Each has two projected *huagong*: one *guazigong* is put on the first tier and the upper *huagong* supports the eave lintel, *liaoyanfang* 撩檐方, through a block (fig.2.7h and fig.2.7i). Along the wall line, the bracket sets support a *chonggong* 重拱 to sustain the eave purlin, *yantuan* 檐椽 through a lintel (fig.2.7h and fig.2.7i). That no *ang* is installed recalls some other Yuan buildings discussed above.

Nevertheless, there are still some differences between a capital set and an intercolumnar set if viewed from the inside. Shown in the middle photograph in figure 2.7f, a regular *guazigong* is put on the first interior tier *huagong* of the capital set, while the intercolumnar set has a *yixinggong* at the same position. Moreover, the capital set is connected by a horizontal beam to the interior column while the intercolumnar one is

connected by a diagonal beam.¹¹⁷

Even though Pingxianglou is a two-story building, its structural carpentry is not very complicated. From its north-south sectional view, the ground floor is divided into three bays (fig.2.7j). The side bays are spanned by *rufu* and the central bay is crossed by a four-rafter beam and covered by a ceiling board. The four-rafter beam, instead of being supported by interior columns, spans between two traversal tie beams that intersect the shafts of the interior columns.

The structure of the second floor of Pingxianglou is called *tongzhufa* 通柱法 (penetrating pillar system), which means, in order to build the upper floors, interior columns are extended from the ground floor to the second or even the third floor. This method is different from that employed at other multi-storied buildings earlier than the Yuan period. Pre-Yuan buildings usually have separate columns on each floor. As we can see clearly in figure 2.7j, two interior columns are extremely tall enough to reach the bracket sets under the top eave. Generally, *tongzhufa* is regarded as a common technique often used in Ming-Qing multi-storied buildings.¹¹⁸ This aspect of Pingxianglou weakens the possibility that it is older than Ming.

The second floor of the building is a room of one bay. A *sichuanfu* spans one column to another with a *shunfuchuan* 順枋串 built beneath it. On the *sichuanfu* stand

¹¹⁷ This diagonal beam is something between *angting tiaowo* 昂程挑斡 and a two-rafter beam, which is also found in the Main Hall of Qinglongsi. I shall discuss its relationship with *tiaowo* in future chapters.

¹¹⁸ Pan Guxi 2005, 43

three *shuzhus*, all of which are connected by a tie beam. The *shuzhu* in the middle is sort of irregular. It is feasible that the middle pillar was not originally designed but added later to strengthen the top beam, *pingliang*.

Some traversal tie beams cross the central bay of the building and several bracket sets are installed between the traversal tie beams and purlins to reinforce the structure. Figure 2.7o shows a curved tie beam across the central bay, which has two bracket sets on top. Figure 2.7m shows *shunshenchuan* 順身串, the tie beam under the *shangpingtuan*, on the second floor, atop which two bracket sets are installed in the same way.

Figure 2.7l displays the unsophisticated structure of the balcony. A horizontal cantilever is projected from the shaft of the slim eave column to support the eave lintel with no bracket sets. On the basis of such a big contrast between the unsophisticated balcony and the refined timberwork of the whole building, I tend to believe that they are not built at the same time. It is very likely that when the Pavilion was built in Song, there was no additional eave on the balcony. Later on, an eave above the balcony was attached to protect the balustrades.

Generally speaking, it is quite complicated to indentify the exact age of Pingxianglou. Although its highly standardized and regular bracket sets resemble those of other Yuan buildings in Sichuan, the style of *tongzhuzao* and the tiny pillar between *lan'e* and *pupaifang* are atypical of Yuan style. Since it was undoubtedly renovated many

times during its history, it may now be impossible to date it precisely. Rather, Pingxianglou provides us with information about the transformation of architectural styles from Yuan through Ming.

8. Qiqushan Damiao 七曲山大廟

Qiqushan Damiao, the Grand Temple in the mountains of Qiqushan, is located nine kilometers to the north of the city Zitong 梓潼 and is considered one of the most famous historical and scenic sites in the northern Sichuan basin. As the pilgrimage site of the cult of Wenchang, a major divine figure of Daoism, it shrines Wenchang Dijun 文昌帝君, the Lord Emperor Wenchang (of “Prospering Culture”), who is also called Zitong Dijun 梓潼帝君, the Lord Emperor Zitong. Wenchang Dijun is well-known as the patron deity of the literary arts. His short biography can be found in the *Mingshi* 明史(the *Standard History of Ming*), and it reads:

The deity, whose family name is Zhang and given name, Yazi, lived at Sevenfold Mountain in Sichuan. Since he served Western Jin rulers and died on the battle field, people built a temple in memory of him. During the Tang and Song periods, he was entitled, the King of Heroic Manifestation, several times. According to the Daoist canon, the Jade Emperor appointed the Divine Lord of Zitong (posthumously Zhang Yazi) to take charge of affairs in the House of Prospering Culture, and to manage official ranks and scholarly honor in the mortal world at the same time. Therefore, he was granted the title, “the Lord Emperor”, in the Yuan dynasty and some schools in the country also enshrined him.

神姓張名亞子，居蜀七曲山。仕晉戰沒，人為立廟。唐、宋屢封至英顯王。道家謂帝命梓潼掌文昌府事及人間祿籍，故元加號為帝君，而天下

學校亦有祠祀者。¹¹⁹

This passage tells how Zhang Yazhi, a native mortal of Zitong, transformed to a national immortal figure. Ever since the Yuan dynasty, the cult of Wenchang Dijun is very popular among those who are pursuing fame and fortune. Such popularity of Wenchang Dijun undoubtedly resulted in active construction in his home shrine.¹²⁰

The complex of Qiqushan Damiao, first built in the Western Jin西晉, was mainly extended during the Yuan period (fig.2.8a). Due to occasional damage by fire and war, construction work on this site never ceased from the Ming to the Qing dynasties. Nowadays, in the temple complex of ten thousand square meters, there remain many valuable historical monuments, including one Yuan timber building, ten Ming monuments and another eight structures dated to the Qing dynasty,¹²¹ and most of them are in good condition. In this section, I shall discuss only the Yuan building and one early Ming building in detail.

(1). Pantuoshidian 磐陀石殿

Pantuoshidian, the oldest building in the Grand Temple, is located across the road west of the main compound (fig.2.8a). The name, *pantuoshi* 磐陀石, means “an uneven monolith”, and refers to a huge monolith discovered at the place where the building is

¹¹⁹ *Mingshi*, juan 50.

¹²⁰ For more information of Wenchang Dijun, see Terry F. Kleeman, *A God's Own Tale : the Book of Transformations of Wenchang, the Divine Lord of Zitong*.

¹²¹ Yao Guangpu, 1991

located. It is said that Lord Wenchang once meditated on the monolith himself and attained his Dao there. The dimensions of this oblong monolith are about 4×2.8×0.85 meters. It is kept in the Hall today as the natural altar to enshrine the statue of the Lord of Wenchang. Unfortunately, the statue has been destroyed.

There is no clear evidence that can prove the exact age of Pantuoshidian. Although two Qing dynasty stelae are installed on the side wall, they merely record irrelevant information regarding construction. According to the history of the Wenchang cult, Emperor Renzong 仁宗 of Yuan conferred the title *dijun* 帝君, the Lord Emperor, on Lord Wenchang in 1316, and the shrine of Wenchang at Qiqu mountain was expanded at that time. The shrine was also renamed from *ci* 祠, shrine, to *gong* 宮, Daoist palace, at that time, which suggests a promotion of Wenchang in the Daoist pantheon.¹²² It is very possible that Pantuoshidian was built during this expansion together with the main compound.¹²³

Pantuoshidian is a small timber hall and an prayer hall, also known as *baidian* 拜殿

¹²² Li Xianwen 1984, 41

¹²³ In *juan 2* of *Chongxiu Zitong xianzhi* 重修梓潼縣誌 (Re-edited Gazetteer of Zitong) published in 1858, a fire was recorded as follows:

In the winter of the fourth year of Yongzheng period, the Main Hall, the Prayer Hall, the Bell Tower, the gate and the Zhongxiao Pavilion (of the Grande Temple) were all destroyed by the fire, the cause of which was unknown.

雍正四年冬，正殿拜殿鐘樓廟門忠孝樓燬於野燒。

According to the text, Pantuoshidian was not one of the victims in this disaster. It is certainly an earlier building than those on the main compound of the Temple.

(the prayer hall), is attached to its front entrance.¹²⁴ The prayer hall, constructed in 1840 during the Qing dynasty, is 7.2 meters long and 3.3 meters wide and has a *juanpeng* 卷棚 roof.¹²⁵ Pantuoshidian faces southeast and has an approximate square plan, the dimensions of which are 8.4 by 8.3 meters (fig.2.8b). The plan is basically regarded as three-by-three-bays, the central bay nearly twice as wide as the bay on each side. In addition, *jianzhuzao* 減柱造, the column-elimination style, is applied to the interior. Thereby, two front eave columns and two rear interior columns have been taken off of this building (fig.2.8b). Such a technique of *jianzhuzao* that is also employed in the Main Hall of Lifengguan and Feilaidian at Dongyuemiao is usually considered evidence to identify a Yuan timber building.¹²⁶ In addition, Pantuoshidian does not have a rear entrance as the Lifengguan building does and the natural monolithic altar is placed against the rear wall.

Figure 2.8.1b shows that Pantuoshidian is built on a stone terrace with a staircase in front. The building has a nine-ridged roof of a single eave that is covered by yellow glazed tiles. Two round and decorative windows are installed on the façade. The front corner columns are about 35 centimeters thick and 3.25 meters high. The ratio of its diameter to its height is about 1:9, which makes the column appear a little thick. *Cejiao* 側腳 (entasis) is applied on these two corner columns by making the top of the corner

¹²⁴ Figure 2.8b does not show the incense hall attached to the hall.

¹²⁵ *Juanpeng* is a roof type that was popular in Qing dynasty, the roof frame of which, without any ridge spine, consists of two parallel ridges spanned by curved rafters.

¹²⁶ See explanation of *jianzhuzao* in section 1 of Chapter 2.

column lean slightly inward about eight centimeters, nearly 2.4 percent of the height of the column itself.

The *yan'e* 簷額 is curved slightly downward and has a round section, the diameter of which is 35 centimeters. Therefore, it is thick enough to cross the whole width of the façade. It is also remarkable that there is no *pupaifang* 普拍枋 on top of the *yan'e*, and *ludou* 櫨料 the capital block of the intercolumnar bracket sets, sits directly on *yan'e*. Because *pupaifang* is not mentioned in *Yingzao fashi*, such a design of not using *pupaifang* is often connected with a pre-12th-century building.

There are five bracket sets installed on the façade: two corner sets and three inter-columnar sets. Since the front eave columns have been eliminated, there are no capital sets on the façade. With no *huagong* at all, the intercolumnar set is five-*puzuo* and has two tiers of *ang*, both of which are genuine *ang* (fig.2.8d). The first tier of *ang* carries a *yixinggong* 翼形拱 and a member called *huatouzi* 華頭子, is projected from the capital block bearing the lower *ang* (fig.2.8d).¹²⁷ The upper tier of *ang* does not have any traversal bracket on top and sustains the eave purlin through a block.

The rear part of the inter-columnar set projects one tier of *huagong* from the capital block (fig.2.8e). Between *huagong* and *ang*, a triangular member that functions as a

¹²⁷ According to the *Yingzao fashi*, *huatouzi* usually has a two scroll profile. The *huatouzi* in Pantuoshidian is quite similar to that of the *Yingzao fashi*.

xuexie 榑楔¹²⁸ is inserted between the *huagong* and *ang* to fix the angle between them.

The inner end of the *ang* is extended long enough to bear the *xiapingtuan*. The upper tier of *ang* is much shorter than the lower one (fig.2.8g).

The capital set on the side of the building is much simpler than the bracket sets on the façade (fig.2.8f). There is only one *huagong* toward the outside and a *zhaqian* curved downward connects the capital to a three-rafter beam, *sanchuanfu* 三椽枋. Such a concise bracket set can be identified as four-*puzuo*.

The modular unit, *cai*, applied to the bracket sets is seventeen by twelve centimeters, close to Grade Seven in *Yingzao fashi*. The bracket sets of Pantuoshidian resemble those of the Main Hall of Yong'ansi and Feilaidian at Emei in many respects. For example, these two building also have a triangle wedge that is similar to *xuexie* installed at the back of their inter-columnar bracket sets. Moreover, the upper tier of *ang* in both buildings does not have a traversal bracket above (fig.2.2e and fig.2.4g).

Pantuoshidian has a four-rafter timber structure and the only interior column, represented in the sectional view, divides its interior space into two rooms (fig.2.8h). The composition of the front room is quite unique compared to other Yuan buildings in Sichuan in which a *zhaqian* or a *rufu* usually spans in the front room. In Pantuoshidian,

¹²⁸ According to the *Yingzao fashi*, *xuexie* 榑楔 is a transitional member which is fixed into a *liangzhudou* 連珠門 (piled blocks) to hold a *shang'ang* 上昂 (up-ang, a sort of strut). Strictly speaking, the triangular member here in Pantuoshidian, the name of which is unknown yet, is not a genuine *xuexie*, because there is neither *liangzhudou* nor *shang'ang*. Nonetheless, its function is similar to a *xuexie*, which is, like a wedge, to strengthen the diagonal ang-cantilever from inside. *Xuexie* is very frequently used in the Yuan buildings at Jiangnan. I shall return to this point in future chapters.

the lower *ang* of the bracket set is extended all the way to the *xiapingtuan*, and there is no horizontal beam connecting the bracket set to the interior column.

The rear room, the bigger one, is spanned by a three-rafter beam, *sanchuanfu*, from the interior column to the rear eave column. Since two rear interior columns were eliminated, there is enough space for an altar. A *shuzhu* 蜀柱 is built on the *sanchuanfu*, and bears the *pingliang* together with the interior column.

(2). The Main Hall of Guandimiao 關帝廟正殿

During the Yuan dynasty, Wenchang Dijun, together with Guan Yu 關羽¹²⁹, another major Daoist figure, were granted the title of Shuangsheng 雙聖, the Two Sages. The former represents civil art, while the latter symbolizes military ability. Hence, in the temple complex of Qiqushan Damiao, are temples to the deities of both civil and military affairs. The temple to Guan Yu, is known as Guandimiao 關帝廟, the Temple of Emperor Guan.

Guandimiao lies north of the main compound of the Grand Temple (fig.2.8a). It consists of three major buildings that are located along its east-west orientated axis, and the whole compound is built on one platform of 20 centimeters high. From west to east,

¹²⁹ Guan Yu (?-220) was a general under the warlord Liu Bei during the late Eastern Han and Three Kingdoms era. He played a significant role in the civil war that led to the collapse of the Han Dynasty and the establishment of Shu Han, (one of the Three kingdoms), of which Liu Bei was the first emperor. Due to the historical novel *Sanguo Yanyi* 三國演義 (Romance of the Three Kingdoms), in which his deeds and moral qualities have been lionized, Guan Yu's true life stories have largely been fictionalized. He was deified as early as the Sui Dynasty and is still being worshiped by Chinese people today.

there are Shanmen 山門, the Main Gate, Baidian 拜殿, the Prayer Hall, and Zhengdian 正殿, the Main Hall (fig.2.8j).

The Main Hall is a finely built and well-preserved timber building. According to the local administrator, it is dated to the Hongwu 洪武 reign period(1368-1398) of the early Ming. The earliest textual record of the Main Hall available today is an inscription known as *Zitongxian peixiu Qiqushan Guandimiao beiji* 梓潼縣培修七曲山關帝廟碑記 (The Record of the Restoration of Guandimiao at Qiqushan, Zitong County) and is found on a stele dated to 1860, the tenth year of Xianfeng 鹹豐 period of Qing. The stele tells us that by the time of the restoration in 1860, the building had already been there for hundreds of years. Although there is no other written evidence, such as an original inscription on the architecture, to testify the exact age of the building, it is likely that the Main Hall of Guandimiao is an early Ming building.¹³⁰

The one-storied Main Hall is orientated east-west with its entrance adjacent to the Prayer Hall on the west (fig.2.8k). Covered by a nine-ridged roof, the building is composed of two rings of columns which form a three-by-three-bay plan. The dimensions of the plan are 16 by 15.4 meters, close to a square. The central bay on the facade is eight

¹³⁰ Liang Sicheng 梁思成 mentioned another Ming building of Qiqushan Damiao, Tianzundian 天尊殿 (Hall of Heavenly Honor), in his book, *Zhongguo jianzhushi* 中國建築史, which was written in 1954 and did not get published until 2005 in Tianjin. On page 386, he briefly introduced Tianzundian, and compared it to the Main Hall of Yanfusi 延福寺 in Zhejiang. He thought that Tianzundian was very possible an early Ming building or no later than middle Ming. Unfortunately, the author was not able to see this building during her last trip to Sichuan and detailed drawing of this building is not available. Even Liang himself did not provide any image of Tianzundian in his book. However, according to Yao Guangpu (Yao 1991,77), the Main Hall of Guandimiao has a very similar timber structure to that of Tianzundian. Therefore, people may have reason to believe that the Main Hall of Guandimiao and Tianzundian were built during the same time.

meters wide and the dimensions of the side bays are about half the central one. The proportion of the bays on the side of the building is very similar to that on the façade. The central bay is 7.7 meters wide and the side bays are between three and four meters. Clearly, the central bay has been expanded to enable a spacious worshipping area in the center of the building, where an altar is installed to enshrine a statue of Guan Yu.

Figure 2.81 is a measured drawing of the front elevation of the Main Hall. It is clear that the thickness of the front eave columns gradually decreases from bottom to top, as does the thickness of the wall. Since the central bay of the façade is much wider than the side bays, four intercolumnar bracket sets are installed in the central bay while only one is installed in the side bays. Nonetheless, in contrast to the Yuan buildings discussed in the previous sections, which usually have a round and thick *yan'e* 簷額 curved downward to support the span, *yan'e* in this building is nothing like that. Its *yan'e* is relatively slender and straight, and has a rectangular section. A *pupaifang* 普拍枋 is put on the *yan'e* and there is no space between them. Another accessory tie beam, which may be called *you'e* 由額 according to the Song terms, is beneath the *yan'e*.

The door panels on the front elevation of the building are highly decorated. Four Daoist figures are carved and painted on four door panels of the central bay. The other door panels are ornamented with lattices and carvings of flowers and birds (fig.2.81). The patterns of the lattices and carvings on the middle door panels of the central bay are

somewhat different from those of the side bays.

The bracket sets on the façade are extremely elaborated, in contrast to those on the other sides of the building which seem simple and coarse. There are three major types of bracket sets installed on the façade: the capital set (fig.2.8n), the intercolumnar set (fig.2.8o) and the corner set (fig.2.8m).

The capital set is five-*puzuo* with one tier of *huagong* and two tiers of *ang* (fig.2.8r). In addition to the orthogonal *huagong*, two *xiegong* 斜拱 are projected from *ludou* 櫺門, the capital block(fig.2.8q). A *yixinggong* 翼形拱 is put on the first tier of *ang*, and is decorated by cloud pattern. The upper tier *ang* offers leverage by balancing the load of *xiapingtuan* 下平樑 and *yantuan* 簷樑(eave purlin).

The intercolumnar set looks nearly the same as the capital set except that the capital set is connected to the interior column from inside by a *rufu*, while the intercolumnar set is not. The intercolumnar set has a triangle member that functions a *xuexie* 榑楔 installed above the inside *huagong* to reinforce the structure of the *ang* (fig.2.8p).

There is nothing exceptional about the roof structure of this building. Two interior columns divide the building into three rooms from front to back. The front bay is crossed by a *rufu* from the capital set to the shaft of the interior column. Additionally, another tie beam, *shunfuchuan* 順袱串, ties the eave column and is inserted into the interior column

either. A *shuzhu* 蜀柱 stands on the *rufu* to support *xiapingtuan*. The structure of the rear bay is similar to that of the front except for the different bracket sets. A *sichuanfu* 四椽栿 spans the middle bay and also has a *shunfuchuan* beneath. A reversed *tuofeng* 駝峰, a camel-hump like member, is put between these two beams. Above the *pingliang* 平梁, there is a *shuzhu* together with two *chashou* 叉手 sustaining the *jituan* 脊樑.

9. Yong'anmiao 永安廟

Yong'anmiao, the Temple of Eternal Peace,¹³¹ is erected on the hillside in the remote and backward town 100 kilometers to the northwest of the Nanbu city, Sichuan. There is no reliable source yet to indicate the date of the temple and only a Qing stele dated to 1804 bearing the dates and circumstances of the earliest erection in Tang and repair in Qing has been discovered. The inscription is titled, *Peixiu Yong'anmiao beiji* 培修永安廟碑記 (The Inscription of the Restoration of Yong'an Temple), and it reads:

Yong'an Temple is located at the ancient town of Yong'an. In the second year of Yonghui period (651) during Emperor Tang Gaozong's reign, a local official appealed to the royal court for the erection of the temple in order to protect the people from flood, drought, and pestilence. The emperor consented and the official constructed the temple in response to the decree. Although it has been more than a thousand years (since it was first built) and the graceful decree has also been lost for a long time, the temple still retains the main beam, which is inevitably due to the increasing miraculous brightness of this place.

¹³¹ The name Yong'anmiao is only slightly different from another temple in Langzhong called Yong'ansi, the Monastery of Eternal Peace. They are not proved to be related.

永安廟，古永安鎮也。唐高宗永徽二年，守土者以廟請請於朝，為士民水旱疾疫之禱，天子是之，乃奉敕修建。今千餘年矣。恩敕雖久失落，上有紫金梁巍然獨存，非吾地之增靈光矣。

On the basis of the inscription, it is known that the temple was first built in the Tang and a major beam that could possibly date to Tang was still retained when the Qing stele was inscribed. Furthermore, two inscriptions written in ink on the beams are still legible and they record, respectively, two inconsequential alterations in the Qing dynasty, one in 1724 and the other in 1759. Since no evidence can precisely date the temple, some scholars, on the basis of their own understanding, tend to identify it as an early Ming building. By comparing Yong'anmiao to the other Yuan buildings in Sichuan, for example, the Main Halls at Lifengguan and Wulongmiao, I shall argue there are a number of similarities between Yong'anmiao and these two Yuan buildings. It is possible that Yong'anmiao is a Yuan building, which will be proved in the succeeding pages.¹³²

The temple is oriented to the southeast and has a square and three-by-three-bay plan, the dimensions of which are 8.2 by 8.2 meters (fig.2.9a). On each side of the building, the central bay is twice as wide as the side bays, which resembles the layout of the Main Halls of Lifengguan and Wulongmiao. The front is a three-bay porch of 2.1 meters in width. There are fourteen columns in total—two interior columns and twelve

¹³² Information of Yong'anmiao has not been published anywhere else other than the governmental document, *Sichuansheng wenwu baohu danwei tuijian cailiao* 四川省文物保護單位推薦材料 (Application Material for the Cultural Heritage Unit of Sichuan Province). In this document, the temple is dated to early Ming. Such a conclusion does not depend on any reliable source or even a thorough investigation of the building. Even the local administrative official prefers the thought that it is a Yuan building.

eave columns that compose the outer ring. Another two interior columns might have been eliminated on purpose, which are evident from the discussion of its roof structure later. The characteristic Yuan technique, *jianzhuzao* 減柱造, is thus employed on this building.

The façade (fig.2.9b) shows that Yong'anmiao has a hip-and-gable roof and its front eave columns are all connected to each other by *pupaifang* 普拍枋. The *yan'e* 簷額, on the other hand, merely spans the central bay, while the side bays are crossed by an individual associate column-tie beam, *you'e* 由額, that is installed lower than *yan'e*. In addition, both *yan'e* and *you'e* are curved downward in response to reinforcing the span.

The arrangement of bracket sets on the front elevation of Yong'anmiao greatly resembles that of the building in Wulongmiao. On the facade are installed two corner sets, two capital sets and one intercolumnar set on the central bay, all of which have *xiegongs* of 45 degree angle without any *ang* (fig.2.9b). The capital set has a *chonggong* on its octagonal *ludou* parallel to *pupaifang* and has two tiers of *huagong* projected outward, which suggests that it is a five-*puzuo* bracket set (fig.2.9g and fig.2.9h). Two *xiegongs* of 45 degree angle, the length of which are much shorter than the orthogonal brackets, are extended from the capital block as well. Atop the first tier of *huagong* is a hexagonal block, which supports one traversal bracket, two symmetrical *xiegongs* and the top orthogonal bracket. The traversal bracket, interestingly, has a zigzag profile that differs from either a regular bracket or a wing-shaped bracket. The top tier of oblique and

orthogonal brackets immediately supports the eave purlin(fig.2.9d). The rear part of the capital set is simple—only one tier of *huagong* is installed to bear a *zhaqian* that is inserted into the shaft of the interior column (fig.2.9f).

The intercolumnar set is a five-*puzuo* set, as well, but more complicated than the capital one (fig.2.9e). It radiates one orthogonal (*huagong*) and two *xiegongs* (*xiegong*) of 45 degree angle from its octagonal *ludou* and they jointly support a traversal bracket. Each of these brackets on the first tier projects more brackets on the second tier toward front, side and obliqueness. On the top tier are five brackets in total upholding the *liaoayangfang*—three are orthogonal brackets and two are oblique. The rear part of the intercolumnar set, in contrast to the capital set, has two tiers of *huagong* and a *angting tiaowo*, is fixed and extended long enough to bear the *xiapingtuan* (fig.2.9g). A wedge is inserted between the upper tier *huagong* and the *angting tiaowo* to stabilize the structure. Such a composition of the rear part of the intercolumnar set recalls the same formation of bracketing the building in Wulongmiao (fig.2.5e and fig.2.5g). With regard to the corner set, it resembles the intercolumnar set in many respects but its capital block is four-sided as opposed to octagonal as we observe in the capital and intercolumnar sets (fig.2.9c and fig.2.9h).

The roof structure of Yong'anmiao, represented in figure 2.9i, has two noteworthy features. An interior column which was supposed to be installed in the building is

eliminated and replaced by a *shuzhu* 蜀柱, and a three-rafter long tie beam is employed to link the rear eave column with the interior column to compensate for the eliminated column. This is what the technique called *jianzhuzao* works for, to enlarge the interior space. Moreover, a layer of bracket sets, recalling the Main Hall of Lifengguan(fig.2.1g), is built above the interior column and continues toward the back of the hall. The *shuzhus* that stand on the three-rafter tie beam support a ceiling board and the *pingliang* 平梁 as well.

Although Yong'anmiao has hitherto been dated to early Ming, many of its architectural features resemble other Yuan buildings in Sichuan. Its bracket sets on the front elevation are analogous to those of Wulongmiao. The typical Yuan timber technique, *jianzhuzao*, is applied to the roof skeleton. Moreover, Yong'anmiao has no crucial similarities with another early Ming building, the Main Hall at Dou-Kousi, that would support to a Ming date. In summary, it is feasible that Yong'anmiao is a Yuan building.

10. Dou-Kousi 豆叩寺

Dou-Kousi is located at Doukou Town, which is 102 kilometers to the south of the county seat of Pingwu 平武. It was originally called Wuxianmiao 五顯廟 and was renamed to *Dou-Kou* 豆叩 later because its construction was sponsored by two local

families, whose last names are *dou*竇 and *kou*寇.¹³³ Originally the monastery was oriented east-west and was like a quadrangle. It once had, from east to west, a main gate, two side chambers—one called Luohuandian羅漢殿 and the other called Guanyindian觀音殿—and the Main Hall. Unfortunately, except for the Main Hall, the other buildings have been destroyed. There are not sufficient textual resources to prove the age of the Main Hall, but the architectural style of the building strongly suggests that it dates to Ming. Moreover, if comparing Dou-Kousi to the famous mid-Ming architecture compound of Bao'ensi報恩寺 in Pingwu,¹³⁴ we can be confident that Dou-Kousi is earlier than Bao'ensi and is very likely an early Ming structure.

The Main Hall of Dou-Kousi has a square three-by-three-bay plan, the dimensions of which are 12.5 by 12.5 meters. On each side, the central bay is about twice as wide as the side bays. There are sixteen columns in total: twelve are eave columns and two are interior columns. Neither *yizhuzao* 移柱造 nor *jianzhuzao* 減柱造 is applied as are common in Yuan buildings(fig.2.10a).

The platform of the building is 0.45 meters high and is made of stone. The building is 8.5 meters high, including a nine-ridged roof of a single eave (fig.2.10b). It is clearly that the top of the eave columns leans slightly inward, evidences of *cejiao* 側腳. In

¹³³ It is not sure which appears first, the name of the town or the name of the temple.

¹³⁴ Bao'ensi 報恩寺, located right in the county seat of Pingwu, is one of the most important Buddhist monasteries in Sichuan. It was built during the Zhengtong 正統 reign period (1435-1449) of the mid-Ming by local governors, the Wang family. It is well-known for its magnificent architecture and exquisite sculpture. It is a perfect representation of the official architecture style of mid-Ming. See *Bao'ensi in Pingwu Baoen'si* 平武報恩寺 (*Kexue chubanshe* 科學出版社, 2008).

contrast to the other Yuan buildings in Sichuan, most of which have a thick and downward curved *yan'e*, this building has a very straight *yan'e* 簷額.

The bracket sets of the Main Hall at Dou-Kousi are extraordinary, not only among buildings in Sichuan, but the whole country. There are a total of five bracket sets installed on the façade: two corner sets, two capital sets and one inter-columnar set right in the center. All of them are fan-shaped and there is almost no difference between the front views of the capital and intercolumnar sets.

The capital set is a six-*puzuo* bracket set that projects three tiers of orthogonal brackets (fig.2.10f).¹³⁵ These brackets are not regular *huagong* 華拱, but *jia'ang* 假昂 instead, which suggest that they function as *huagong* but appear like *ang*. On the second tier of the *jiaang* is a *yixinggong*, and the third tier bears a slim board to sustain the purlin (fig.2.10e). The profile of the *jia'ang* is bizarre; it is stretched long and upward instead of downward like a regular *ang*. Moreover, three tiers of *xiegong* of 45 degree angle are projected from both sides of the orthogonal brackets, all of which are in the disguise of *jiaang* (fig.2.10c).

The rear part of the capital set projects two tiers of regular *huagong*, that are orthogonal members, to support a *rufu* that connects to the interior column. In addition, there are also three tiers of oblique brackets of 45 degree angle on both sides of the orthogonal brackets (fig.2.10d) and the top tier of oblique brackets bears a slim tie board

¹³⁵ See figure 2.10c, the bracket sets of the Main Hall of Dou-Kousi.

(fig.2.10f). The rear part of the intercolumnar set varies slightly from that of the capital ones. Instead of two tiers of orthogonal brackets, it projects three tiers of orthogonal *huagong* inward.

The fan-shaped bracket sets of the Main Hall of Dou-Kousi look unique and complicated because of the oblique brackets and the irregular profile of the *jia'ang*. Such a bracket set has not been found anywhere else so far. Even the Ming architecture of Bao'ensi, which is not far from Dou-Kousi, has nothing like the bracket sets here. Moreover, it seems that the arrangement of the bracket sets in Bao'ensi is much denser than that of the Main Hall of Dou-Kousi (fig.2.10g). Therefore, the earlier date of the Main Hall of Dou-Kousi should be confirmed.¹³⁶

The roof structure of the Main Hall has eight transverse rafters and two interior columns (fig.2.10i). There is no bracket set on both the rear eave columns and the interior columns. Compared to other Yuan buildings in previous sections, the joints of the columns and beams seem to have been simplified. It should be noticed that the bottom of the *shuzhus* on the *rufu* is pointed and two *tuofeng* 駝峰 are installed on top of the *sichuanfu* to sustain the *pinglian* 平梁. Furthermore, the color paintings on the architectural members are still recognizable in the hall (fig.2.10h).

¹³⁶ It is widely accepted that Ming-Qing buildings tend to have more intercolumnar bracket sets in one bay than do Yuan and pre-Yuan buildings. Regarding the architecture of the Ming-Qing period, the intercolumnar sets in one bay can be as many as four or even six, just as figure 2.10g displays, while most of the Yuan or pre-Yuan buildings are more likely to have only one, or at most, two intercolumnar sets in one bay. Therefore, the number of the intercolumnar sets in one bay is usually considered one of the criteria to judge the date of a timber building. Generally speaking, given that other conditions are equal, the more intercolumnar sets a building has in one bay, the later it is.

11. Dubaisi 獨柏寺

Dubaisi is located at Shanghe Town上和鎮, a remote village nearly 20 kilometers away from the county seat of Tongnan潼南, Chongqing. The current monastery is part of an elementary school. It is said that the monastery was first built in Tang and once enshrined a huge statue of Buddha that was carved from a single cypress. This is the reason why the place is called *dubai*獨柏, sole cypress.¹³⁷ Only the main hall of the monastery survives. Today it is used as a storage facility and is in deplorable condition. Even though the building was deemed a provincial cultural heritage site of Sichuan in 1991 (and of Chongqing in 2000), it has not been treated well even since then (fig.2.11a).

The government has claimed the Main Hall to be a Yuan building, but this does not seem controvertible. To begin with the bracket sets and the roof structure do not resemble the other Yuan buildings in Sichuan. Its four intercolumnar bracket sets in the central bay, for example, suggest the date of the building not earlier than the Ming.¹³⁸ Nonetheless, since no reliable source that can inform us about the construction history of the

¹³⁷ In *Tongnan xianzhi* 潼南縣誌 (Gazetteer of Tongnan), written by Xia Huang 夏璜 in 1915, it records:

Dubaisi is fifty *li* to the north of the county seat. It was first built in Tang and was once named Huiyiyuan. It enshrines a statue of Buddha, the height of which is more than one *zhang* (1 *zhang*=3.33 meters). The Buddha is carved from a cypress and is decorated by gold. Accordingly, the monastery is given the current name.

獨柏寺，縣北五十裡，唐時建。舊名慧日院。內有佛像高丈餘，□巨柏雕成，飾金，寺因以名。

¹³⁸ As has been demonstrated in the section on Dou-Kousi, generally speaking, the more intercolumnar sets a building has in its central bay, the younger it is. Almost every Yuan building discussed so far has no more than three intercolumnar bracket sets in each bay, not including those that have column under the capital set eliminated. Only a Ming building would have four inter-columnar sets in its central bay, as we have seen in the Main Hall of Guandimiao (see section 2.8).

monastery, it is arbitrary to draw conclusions at present.

The building is a three-by-three-bay square structure, oriented north-south (fig.2.11b). On each side of the building, the central bay is twice as wide as the side bays. Sixteen columns are arranged in two rings, none of which is displaced or eliminated. The roof structure has a total transverse span of eight rafters (fig.2.11c). A *rufu* is installed between the eave column and the interior column with a *shuzhu* standing atop it to support the *xiapingtuan*. The space between the two interior columns is spanned by a four rafter beam, with two *shuzhus* standing atop it to bear the *pingliang*. Moreover, two tie beams, *shunshenchuan* 順身串, parallel to the front wall, are slightly curved downward, built to connect the interior columns and the *shuzhus* from one bay to another (fig.2.11c).

With regard to the bracket sets on the façade, there is almost no difference between the capital and the intercolumnar sets from the outside (fig.2.11d). Both of them have two tiers of *ang* and no *huagong* or oblique brackets. On the first tier *ang* is a *guazigong*, and a small block is put on the second tier *ang* to support the eave lintel immediately. The rear part of the capital set varies from that of the intercolumnar set. The capital set has one orthogonal bracket projected inward to support the *rufu*(fig.2.11f and fig.2.11g), while the intercolumnar set projects one *huagong* inward as well, and atop the *huagong* is an *angwei tiaowo* 昂尾挑斡—the inner end of the *ang* is extended long enough to uphold the *xiapingtuan*(fig.2.11e and fig.2.11h). From fig.2.11g and fig.2.11h we see both *ang*, of

the capital set and the lower one of the intercolumnar set, are in fact *huagong* disguised as *jia'ang*, and only the upper tier *ang* at the intercolumnar set is genuine.

CHAPTER THREE

COMPARISON OF JIANGNAN AND SICHUAN BUILDINGS

The architectural features of Jiangnan and Sichuan buildings that have been discussed in Chapter 1 and Chapter 2 will be compared in this one, on the basis of plans, bracket sets, roof structures and decorative details, in that order, followed by analysis of their similarities and dissimilarities.

1. Plan

Timber building plans in Jiangnan¹³⁹ can be roughly divided in to two types: squarish three-by-three-bay plan and rectangular two-by-three-bay plan.¹⁴⁰ Main Halls of Yanfusi, Tianningsi, Zhenrusi and Xuanyuangong belong to the first type (fig.3.1a). Their layouts and columniations are very similar to one another. All of them have sixteen columns arranged in two rings, which compose three bays on each side. The proportions of the bays are quite analogous: on the façade, *mingjian* is about twice as wide as *cijian*; on the side, the front bay is almost as wide as the middle bays that are nearly twice the rear side bays (except for the Main Hall of Xuanyuangong, where the front bay is as wide as the rear bay). By minimizing the size of *cijian* and the rear bay on the side, the front central bay, *mingjian*, and the front bay on the side, are spacious enough for a large

¹³⁹ This section will not include the stone structures of Jijiansi (see Section 5 of Chapter 1) because stone is different from timber.

¹⁴⁰ A rectangular plan hereinafter suggests a plan, whose long side is much wider than the short side, while a squarish plan, on the other hand, indicates a rectangular plan of four equal sides or the width of the sides are very close to one another.

number of worshippers and there is also enough room for an altar in the central bay. The altar of the Main Hall in Yanfusi is worth an additional notice. The shape of its altar is not a rectangle but a C-shape, which enables some additional space for the worshippers in the central bay. Such a three-by-three-bay plan usually designed for a small-sized main hall¹⁴¹ is a tradition ever since the Tang and Song periods.¹⁴² Quite similar plans are also found in two Jiangnan buildings dated to Song, the Main halls of Baoguosi¹⁴³ (fig.3.1c) and Baoshengsi¹⁴⁴ (fig.3.1d).

Although the dates of these six Song and Yuan buildings range from the 1000s to 1300s, they apparently share the same type of plan. If we focus on dimensions of these plans, we will find a very interesting underlying transformation. Table 4, displaying dimensions of façade and side of each building, and ratios of façade to side, reveals how design theory of building plans changed slowly over time from the eleventh to the fourteenth century in Jiangnan.

Numbers in the last column of Table 4 indicate that the later date of the building, the bigger the ratio of façade to side. In other words, proportionally, later buildings tend

¹⁴¹ A building with three or fewer bays on its façade is considered a small-sized building.

¹⁴² Ever since the Tang and Song periods, three-by-three-bay squarish plans had been applied on small-sized Main Halls as a tradition both in the north and south (see Zhang Shiqing 2002, 107). Although the squarish plans in the north and south look similar to each other, their roof structures are quite different. Moreover, this type of plan disappeared after Yuan in the north, while it still continued in the south until Yuan and Ming periods. This issue will be further discussed in the next chapter.

¹⁴³ Baoguosi is located at Ningbo, Zhejiang province. Its Main Hall, dated to 1013(the sixth year of Dazhong xiangfu 大中祥符 reign period of the Northern Song), is hitherto the oldest timber structure in Jiangnan. For a monographic study of Baoguosi, see Guo Daiheng 2003.

¹⁴⁴ Baoshengsi is located at Luzhi, Jiangsu province. The Main Hall, dated to 1073 (the sixth year of Xining 熙寧 reign period of the Northern Song), collapsed in 1280. Zhang Shiqing reconstructs the building on paper on the basis of available pictures and textual records. See his article in *Wenwu*, no.11, 2005, pp.77-87

to have a wider facade and a narrower side. In regard to the buildings dated before 1318, the year when Main Hall of Tianningsi was built, their façades are wider than the sides. The craftsmen expanded the front bay and middle bay along the side to create a spacious worshipping room. Such a design is unique and has not been found in any building with a square plan in the north.¹⁴⁵ On the other hand, in terms of the buildings later than 1318, their façades are wider than the sides. This time, the worship space was widened by the enlargement of the width of *cijian* and *mingjian* along the façade.

The only building in Jiangnan that has a rectangular plan is Ershanmen of Yunyansi, a gate hall, *shanmen* 山門, instead of a small-sized Main Hall, sometimes also called Tianwangdian 天王殿 (Hall of Heavenly Kings) in a Buddhist monastery, which is supposed to enshrine the statues of four Heavenly Kings, Tianwang 天王.¹⁴⁶ The statues of the four Heavenly Kings are regularly enshrined in a *Tianwangdian* with two statues positioned on each side, and the central bay is reserved as a hallway for the visitors who can face the Main Hall or the main compound of the monastery from here. Ershanmen with a two-by-three-bay rectangular plan is a typical building of this kind. It is used to host the statues of four Heavenly Kings (fig.3.1b). Therefore, the different plan of Ershanmen compared to other Yuan buildings in Jiangnan is caused by its different

¹⁴⁵ Zhang Shiqing 2002,109

¹⁴⁶ In Buddhism, four heavenly kings (Sanskrit: *caturmahārāja*) guard the four cardinal directions of the world. They are collectively named in Chinese as follows: Chiguo tianwang 持國天王 (Sanskrit: Dhritarastra) who guards the east, Zengzhang tianwang 增長天王 (Sanskrit: Vidradhaka) who guards the south, Guangmu tianwang 廣目天王 (Sanskrit: Virapaksa) who guards the west, and Duowen tianwang 多聞天王 (Sanskrit: Vaisravana) who guards the north.

function.

Among the thirteen Sichuan buildings that have been elaborated in Chapter 2, only three have rectangular plans. All the other ten buildings are built as squarish, small-sized halls. The ten squarish plans can be further divided into two types: seven belong to Type 1, which has four columns installed on each side and is considered a three-by-three-bay plan (fig.3.1e); three belong to Type 2, which have three bays on their façades as well, but five columns instead of four on their side (fig.3.1f).

Buildings of Type 1 explicitly display coherence in proportion. The central bay on the façade is twice or one and a half times wider than the side bays, while the side bays are almost as wide as both front and rear bays on the side. It is noteworthy that more than half of the buildings in Sichuan belong to Type 1, which suggests that it may be the most typical style of its age in the area.

Another piece of evidence to support this point is Feitianzangdian 飛天藏殿 in Yunyansi 雲岩寺, the only timber building in Sichuan surviving from the Song dynasty and dated to 1181 (the eighth year of the Chunxi 淳熙 reign period of Song).¹⁴⁷ Feitianzangdian is a Daoist building housing Feitianzang 飛天藏, a revolving cabinet imitating a Buddhist sutra library.¹⁴⁸ The squarish three-by-three-bay plan of Feitianzangdian (fig.3.1h)¹⁴⁹ is also similar to Type 1 (fig.3.1e). Similar to the situation in

¹⁴⁷ For the study of Feitianzangdian, see Gu Qiyi, 1986.

¹⁴⁸ For the study of Feitianzang, see Lala Zuo 2005, 92-99.

¹⁴⁹ The present Feitianzangdian has an additional eave at front installed during the Qing dynasty and some extra

Jiangnan, three-by-three-bay squarish plans had already been employed by the Song craftsmen in Sichuan and were very popular in Yuan among small-sized timber structures.

Compared to Type 1, Type 2 is in fact based on Type 1 plus additional columns on the sides. Both Main Halls of Bao'ensi and Qinglongsi have one additional column on the midpoint of each side, perhaps in order to provide extra support to the side structure. The plan of the Main Hall of Yong'ansi is quite different. From south to north, it has four bays instead of three bays in total, and its east and west sides are much wider than the façade. The peculiarity of the Main Hall in Yong'ansi may be caused by accident. This building does not have any common features with other buildings that are located close to it. It is highly likely that the building was largely remodeled during late restorations.

Three buildings in Sichuan have rectangular plans (fig.3.1g). The smallest one, Xiangdian of Dongyuemiao, is an incense hall instead of a Main Hall. It is built as an auxiliary building and as a gate hall leading to Feilaidian. Moreover, since Xiangdian was originally built right in front of the Main Hall, Feilaidian, and was once on the same platform as Feilaidian, it is reasonable that a long narrow plan instead of a square one was built.¹⁵⁰ The other two buildings, Feilaidian and Pingxianglou, have rectangular plans and for that reason they should be considered large-sized buildings instead of

columns are built inside the building to sustain the structure. Figure 3.1h merely shows its original situation in the Song dynasty.

¹⁵⁰ The same explanation also applies to Ershanmen in Yunyansi.

small-sized, given their five-bay façade and four-bay side.¹⁵¹ If a large-sized building is designed to have a squarish plan, the major beams spanning the bays on the side may be too long to be secure. This is why squarish plan is only used for small-sized buildings and rectangular plan for larger buildings.

Jiangzhuzai and *yizhuzao*, usually considered typical features of timber buildings dated to Yuan¹⁵², are employed on some of the buildings in Sichuan but not found in any building in Jiangnan. *Jianzhuzao*, eliminated-column style, is applied on three Yuan buildings: Yong'anmiao, Pantuoshidian and Main Hall of Lifengguan (fig.3.1i). They all have a square plan of Type 1, which means they are supposed to have sixteen columns to compose a three-by-three plan. In order to provide a spacious worship room with fewer columns, however, two interior columns of Yong'anmiao and two front eave columns of Main Hall of Lifengguan were eliminated. Furthermore, both the two front eave columns and the two interior columns were eliminated in Pantuoshidian. Since the dimension of Pantuoshidian is relatively small, its structural stability is seemingly not impaired by the elimination of four columns. These three buildings of *jianzhuzao* are not located far from each other. Both Lifengguan and Yong'anmiao are in Nanbu County, and according to Map 5, they are the closest neighbors of Pantuoshidian at Zitong. Given that *jianzhuzao* was applied on such small and square buildings is not found at other places in

¹⁵¹ A building with five or more bays on its façade is considered a large-sized building.

¹⁵² According to Zhang Yuhua (1979,86-87), both *jianzhuzao* and *yizhuzao* originated during the Song, Liao and Jin period but did not become popular until the Yuan dynasty especially in north China. Pan Guxi (2001, 345) also verifies that *jianzhuzao* and *yizhuzao* were fully developed during the Yuan in the north.

Sichuan, it is might be a regional technique around Zitong and Nanbu Counties. The Main Hall of Bao'ensi is the only building where only *yizhuzao* is applied. It has a square plan of Type 2 and two interior columns, as well as two side eave columns along the same line that are moved a little northward and thus the central bay is enlarged (fig.3.1j).

Feilaidian, the largest Yuan building in Sichuan, is the only structure where both *jianzhuzao* and *yizhuzao* are applied (fig.3.1k). It is an excellent example indicating how *jianzhuzao* and *yizhuzao* cooperate to create a spacious entrance with fewest columns. The red spots on figure 3.1k represent eliminated columns when green spots represent displaced columns. The number of bays on the façade is reduced from five to three while the width of the *mingjian* entrance is expanded from less than five meters to more than eight meters.

According to previous discussion on building plans in Jiangnan and Sichuan, squarish plans applied on small-sized timber buildings seem to be the most popular style in both Jiangnan and Sichuan ever since the Song period. Even in the early Ming period, the squarish plan was still applied in small-sized building in both areas.¹⁵³ Only a few numbers of buildings have a rectangular plan because of their different function and size.

Squarish buildings in Jiangnan, however, are still different from those in Sichuan in three respects. In Jiangnan, they share a common style, which has three bays on each side, In Sichuan, on the other hand, there are squarish buildings of both three-by-three-bay

¹⁵³ In contrast to the north, where the square plan disappeared after the Yuan period. See Zhang Shiqing 2002,107.

plans and three-by-four-bay plans. In addition, the façades of Jiangnan buildings become wider and wider over time compared to the side. But in Sichuan, the ratio of the façade to the side does not show any regular transformation. Moreover, in contrast to Jiangnan, where the front bay along the side of the building is usually expanded to be as wide as the middle bay, the front bay in Sichuan is never intentionally expanded and it is usually as wide as the rear bay.

Six out of thirteen buildings in Sichuan have employed either the *jiangzhuzao* or *yizhuzao* technique, or both. These two typical Yuan techniques are not found in any Jiangnan buildings of the same period. Since *jianzhuzao* and *yizhuzao* were also popular in the north, in Shanxi and Hebei during the Yuan period,¹⁵⁴ it is possible that Sichuan buildings were influenced by the northern styles and techniques, whereas Jiangnan buildings developed in their own way.

The *Yingzao fashi* might explain the reason why *jianzhuzao* or *yizhuzao* never appeared in Jiangnan. *Jiangzhuzao* and *yizhuzao* are techniques invented during the Song, Liao and Jin periods, and probably in the north.¹⁵⁵ They are never recorded in the *Yingzao fashi*, which indicates they are not considered an official Song style. The Yuan buildings in Jiangnan have shown many features recorded in the *Yingzao fashi*.¹⁵⁶ Since

¹⁵⁴ See discussion of Yuan buildings in the north in Chapter 4.

¹⁵⁵ *Jianzhuzao* was applied in the Main Hall of Fengguosi 奉國寺(1020), a Liao building located in Liaoning, and Shennudian 聖母殿 of Jinci 晉祠 (1023-1032), a Song building located in Shangxi. Both *jianzhuzao* and *yizhuzao* were applied in two Jin buildings: Wenshudian 文殊殿 of Foguangsi 佛光寺 (1134) and Mituodian 彌陀殿 of Chongfusi 崇福寺 (1143). See Guo Daiheng 2003, 759.

¹⁵⁶ Other structural features in Jiangnan also prove this point, such as the proportion of *cai* (see Table 5), the

the *Yingzao fashi* was reprinted in Suzhou in 1145(the fifteenth year of Shaoxing紹興 period) during the Southern Song, it was very influential on architecture in the Southern Song and was absorbed by the contemporary regional style in Jiangnan.¹⁵⁷ It is very likely that even the Yuan craftsmen in Jiangnan still strictly followed to the rules in the *Yingzao fashi* or the regional style influenced by the *Yingzao fashi*. They might have considered *jianzhuzao* or *yizhuzao* as northern styles and never learned to use them. Craftsmen's ignorance of *jianzhuzao* or *yizhuzao* in Jiangnan may also explain why they created a spacious worship place by expanding the front bay along the side. Craftsmen in Sichuan never did that. They simply used *jianzhuzao* or *yizhuzao* to eliminate or displace one or more columns to achieve the same effect.

2. Bracket sets

Bracket sets are considered the most significant part of Chinese timber architecture. As the most complicated structure of the building, they help people not only recognize the style of building but study the modular system of the structure. Therefore, usually the first step to understand the timber structure of a building is to study the bracket sets. In this section, the bracket sets in buildings in Jiangnan and Sichuan will be discussed based on the aspects of their modular system, layout of intercolmunar sets, number of *puzuo*

configuration of *fubigong*(see 3.2g), the allocation of *zucui* and *dancai huagong*(see 3.2j) and etc.

¹⁵⁷ Pan Guxi 2005,14

and configurations of *dou*, *gong* and *ang*. In order to present the transformation of the bracket set system through Song, Yuan to Ming, I shall also include some Song buildings as well, which will help us understand the “Yuan” structures much better.¹⁵⁸

(1). Dimensions of *cai* 材 and *zhi* 枳

According to the *Yingzao fashi*, *cai* is the major modular unit of a building, and *zhi* is the subsidiary modular unit. Dimensions of *cai* and *zhi* are usually displayed by the bracket sets. Generally speaking, the section of a bracket arm is one *cai* and the space between every two bracket arms is one *zhi*. Table 5 displays the dimensions of the modular system of some Jiangnan buildings that date from Song to Ming.¹⁵⁹ These dimensions include the width and thickness of *cai*, the width of *mingjian* and the width of *zhi*. Ratios of the width to thickness of *cai*, and the width of *cai* to the width of *zhi* are also shown in the table.

It has been discussed in previous sections that the Main Halls of Baoguosi, Yanfusi, Tianningsi, Zhenrusi and Xuanyuangong have a similar size and plan.¹⁶⁰ Table 5 indicates that, however, the dimensions of their basic modular unit, *cai*, are quite different. The width of the *cai* in the Main Hall of Baoguosi is more than 20 cm and belongs to

¹⁵⁸ Song buildings discussed in the Jiangnan part of the thesis are the Main Hall of Baoguosi (Ningbo), the Main Hall of Baoshengsi(Luzhi) and Sanqingdian of Xuanmiaoguan (Suzhou). Song buildings included in Sichuan is Feitianzangdian of Yunyansi, Jiangyou.

¹⁵⁹ Since the bracket sets of the Main Halls in Zhenrusi and Xuanyuangong are remodeled in the Ming dynasty, in this section, the two buildings are considered Ming structures.

¹⁶⁰ Except for the Main Hall of Yanfusi, all these buildings have a *mingjian* of 5.8-6.2 meters. The Yanfusi building is the smallest building, but its modular unit is not the smallest at all.

Grade IV of the *Yingzao fashi*.¹⁶¹ In the Table, *cai* of Yuan buildings is relatively small—it ranges from Grade VI to Grade VIII and that of the Ming buildings are the smallest—their *cai* is only 13 to 14 cm wide and both belong to the lowest modular grade, Grade VIII. It is noteworthy that both the sizes of the Main Halls of Zhenrusi and Xuanyuangong are bigger than that of Yanfusi, but their modular units, measured from their bracket sets remodeled in Ming, are still smaller than that of Yanfusi, which was built in Yuan. Undoubtedly, the modular unit of *cai* became smaller and smaller in Jiangnan through Song and Yuan to Ming.

Although the dimension of *cai* decreased from Song to Ming, the proportion of *cai* itself did not change much. In the *Yingzao fashi* that was published in 1103 during the Song dynasty, the ratio of width to thickness of *cai* and the ratio of the width of *cai* to the width of *zhi* are stipulated as 1.5 and 2.5 respectively. Except for the Main Hall of Tianningsi, numerical values of the these two ratios in Table 5 deviate from the standard of *Yingzao fashi* less than 5 percent, which suggest that the ratios of width to thickness of *cai* and the width of *cai* to the width of *zhi* did not change evidently ever since Song to Ming in Jiangnan. The modular unit of Main Hall in Tianningsi seems a little extraordinary. Its ratio of the width to the thickness of *cai* is 8% more than the *Yingzao fashi* standard while its ratio of the width of *cai* to the width of *zhi* is 13% more than the

¹⁶¹ In the *Yingzao fashi*, there are eight grades of *cai*. Grade I is the highest and Grade VIII is the lowest. The wider the *cai*, the higher is its grade.

standard.

The modular system of the buildings in Sichuan is far less well-regulated and quite under-influenced by the *Yingzao fashi*. The modular unit *cai* in Sichuan ranges from Grade IV to even smaller than Grade VIII (see Table 6). With regard to the Yuan buildings, *cai* could be as big as 21.5 cm wide and as small as 13 cm wide, apparently not following the width of *mingjian*. It seems that the grade of *cai* neither is in proportion to the width of *mingjian* nor transforms regularly over time.

The ratio of width to thickness of *cai* (WC/TC) also varies. Ratios of six buildings are close to the standard of *Yingzao fashi*, which deviate within 5% from the standard. For the other eight buildings, their ratios of WC/TC are 6.7% to 9% larger or smaller than the standard and show no regulations related to the date or the size of the building. Ratios of the width of *cai* to the width of *zhi* (WC/WZ) largely differ from the standard of *Yingzao fashi*. The ratios deviate within 5% from the standard of *Yingzao fashi* only in two buildings. Most of the other buildings are smaller than the standard. In some building, the ratio can be as small as 1.44, which is more than 40% smaller than the standard. There is only one building, Feilaidian of Dongyuemiao, whose ratio is bigger than that prescribed in *Yingzao fashi*. Given the fact that the ratio of WC/WZ is relatively small in Sichuan, the width of *zhi* is relatively large. This issue suggests that the modular system of the bracket sets in Sichuan is under-influenced by the *Yingzao fashi*.

Table 5 and Table 6 may suggest that the modular system of bracket sets in Jiangnan is quite different from that in Sichuan. Although the grade of *cai* ranges from Grade IV to VIII in both areas, a regular transformation from Song to Ming—the later the building was built, the smaller was the modular unit of *cai*—exists in Jiangnan but not in Sichuan. Moreover, the proportion of *cai* itself in most Jiangnan buildings is not quite different from the standard in the *Yingzao fashi*. In Sichuan, on the contrary, the proportion of *cai* and *zhi* vary from one building to another and do not follow any law that we can tell. Apparently, the standard of the *Yingzao fashi* concerning the modular system of the bracket sets seems to have been a common sense to the craftsmen in Jiangnan, while in Sichuan, people were not quite aware of such rules. The dimension of *cai* in Sichuan is designed in a highly free way.

(2). Layout of intercolumnar bracket sets

Since the dimension of the modular unit *cai* gradually reduced from Song to Ming in Jiangnan, the size of the whole bracket set reduced as well, which results in an increase in the member of intercolumnar sets installed in each bay. Figure 3.2a displays how intercolumnar bracket sets are installed in the Jiangnan buildings. In both Main Halls of Baoguoosi and Baoshengsi, two intercolumnar sets are installed in *mingjian* and only one installed in *cijian*. Along the sides of these two buildings, each bay has only one or two

intercolumnar sets. On the other hand, in the Yuan buildings, such as Main Halls of Yanfusi and Tianningsi, three intercolumnar sets are built in *mingjian*. When it comes to the Ming buildings, numbers of intercolumnar sets built on the façade is double the number in Song buildings. There are in total four intercolumnar sets in *mingjian* and two built in each *cijian* in the Main Halls of Zhengrushi and Xuanyuangong. Undoubtedly, through Song to Ming, there are more and more intercolumnar bracket sets installed with a smaller and smaller modular unit.¹⁶²

Layouts of intercolumnar bracket sets in Sichuan are more complicated. They can be categorized into four types (see fig.3.2b). Type A includes buildings where only one intercolumnar bracket set is installed in the *mingjian* on their façade.¹⁶³ Three of them date from Yuan and one from Ming. In Main Halls of Yong’ansi and Qinglongsi, buildings of Type B, intercolumnar sets are built on each bay on the façade, but not on any other side of the building. In Main Hall of Yong’ansi, two intercolumnar sets are installed in the *mingjian* while in Qinglongsi, there is only one. Intercolumnar sets that are installed on the elevations other than the façade can be found in Type C. Some of them are installed on the middle bay of the side (Main Hall of Lifengguan), some are

¹⁶² With regard to the number of intercolumnar sets, Ershanmen of Yunyansi is irregular. Only two intercolumnar sets are built in *mingjian* and one in each *ciji*, recalling a Song building. Although it was built later than the other two Yuan buildings (Yanfusi and Tianningsi), its bracket sets seem proportionally bigger than those of the other Yuan buildings. It possibly has a bigger *cai* and fewer intercolumnar sets than what a Yuan building is supposed to have. However, without accurate measurements, we are not sure whether there is a reversion in the style of the bracket sets of Ershanmen.

¹⁶³ Pantuoshidian is categorized into this type although it seems to have three “inter”-columnar sets on the façade. However, two of the “inter”-columnar sets are supposed to be capital set if the two front eave columns were not eliminated. Therefore, I still consider that Pantuoshidian has only one intercolumnar set on its facade.

installed on the middle bay of the rear side (Pingxianglou) and others are installed on the front bay of the side (Main Hall of Guanwangmiao). With regard to five buildings of Type D, one dated from Song¹⁶⁴, two dated from Yuan, and two dated from Ming, intercolumnar sets are installed in each bay all around the building. Based on these four categories, we cannot find a pattern that the craftsmen in Sichuan would follow to layout the intercolumnar set—they could choose to or not to build intercolumnar sets in any bay. Since both Yuan buildings and Ming buildings can be found in each type, the layout does not transform chronologically, either.

With regard to the number of the intercolumnar sets in one bay, some buildings have one, some have two and others have three intercolumnar sets in *mingjian*. Two Ming buildings, Main Halls of Guanwangmiao and Dubaisi, have four sets in *mingjian*. It seems that the number of intercolumnar sets in one bay slightly increased from Yuan to Ming in some cases. In addition, buildings of Type A and Type B indicate another fact, that since intercolumnar sets are only installed on the façade of these buildings, it seems that some Sichuan craftsmen paid a lot of attention to the façade of the building but overlooked the sides and the rear elevations.

In terms of the layouts of intercolumnar sets, buildings in Sichuan are drastically different from buildings in Jiangnan. In all the buildings in Jiangnan, intercolumnar sets are built on each bay and on each side of the building, while only four out of thirteen

¹⁶⁴ The bracket sets under the front lower eave of Feilaidian in Yunyansi have been damaged.

buildings in Sichuan are constructed in this way. In Jiangnan, each side of the building, both the façade and rear, are equally treated. In Sichuan, on the other hand, people only built the façade carefully and overlooked the rest of the sides of the building. The only feature they share is that the later the building was built, the more intercolumnar sets that might be installed in one bay.

(3). Number of *puzuo* 鋪作

In the *Yingzao fashi*, *puzuo*, the bracket sets, are “numbered” according to the number of *tiao* (any overhanging member in a bracket set, either *gong* or *ang*, transversally projecting from a *ludou* is considered one *tiao*). Bracket sets with one *tiao* are defined as four-*puzuo*, two *tiao* as five-*puzuo* and so on. In case of the number of *puzuo*, buildings in Sichuan are also drastically different from those in Jiangnan.

In Jiangnan, we can see an evident degrading in number of *puzuo*—Song buildings were built with seven-*puzuo* bracket sets, Yuan buildings with six, and Ming buildings with five or four. The bracket sets of the Main Hall of Baoguoqi and the upper eave bracket sets of Sanqingdian of Xuanmiaoguan¹⁶⁵ are both seven-*puzuo*, which are the

¹⁶⁵ Sanqingdian of Xuanmiaoguan is the only building in Jiangnan that dates from the Southern Song dynasty. It was built in 1179, the sixth year of Chunxi 淳熙 reign period. In contrast to the other Song-Yuan buildings we have discussed, all of which are middle-or-small-sized building with a three-by-three-bay squarish plan, Sanqingdian is constructed otherwise. It has a double-eave roof and a nine-by-six-bay plan. Its façade is more than 43 meters wide and its side more than 25 meters. It is a huge building compared to its contemporaries in Jiangnan. Lately, its lower eave are suspected to have been rebuilt or attached later than the upper eave, probably in Yuan or Ming. See more discussion of Sanqingdian in Liu Dunzhen's article, "Suzhou gujianzhu diaochaji" (1936).

second high grade *puzuo* according to the *Yingzao fashi* (see fig.3.2c).¹⁶⁶ Although Sanqingdian is much larger than Main Hall of Baoguosi, they both project two tiers of *huagong* and two tiers of *ang*. Main Hall of Baoshengsi, though of a similar size than that of Baoguosi, has much simpler bracket sets. It projects one *huagong* and one *ang*, and is considered five-*puzuo*. It seems that with regard to the Song buildings in Jiangnan, high grade bracket sets, such as seven-*puzuo*, are employed both in large and small sized buildings, while middle grade bracket sets are also used in a less important structure.

Generally speaking, bracket sets of the Yuan buildings in Jiangnan belong to the middle grades. The bracket sets in the Main Halls of Yanfusi and Tianningsi are six-*puzuo*. They project one tier of *huagong* and two tiers of *ang*. However, due to the unique function of Ershanmen of Yunyansi, its bracket sets only have one tier of *huagong* and are considered four-*puzuo*, the lowest grade of bracket sets according to the *Yingzao fashi* (see fig.3.2d). The bracket sets remodeled during the Ming are further degraded. Those of Xuanyuangong are five-*puzuo* and those in Zhenrusi are only four-*puzuo* (see fig.3.2d). Undoubtedly, bracket sets in Jiangnan are degraded along with the shrinkage of the size of their modular units and the increase of the number of intercolumnar sets.¹⁶⁷

On the other hand, the number of *puzuo* of the buildings in Sichuan ranges from

¹⁶⁶ In the *Yingzao fashi*, there are five grades of bracket sets, numbered from four to eight. Either *huagong* or *ang* that projects outward from the capital block is considered one *tiao* 跳. Four-*puzuo* has only one *tiao*, while five-*puzuo* has two *tiao* and so on.

¹⁶⁷ Based on this conclusion, it is likely that the lower eaves of Sanqingdian were rebuilt in Ming, since its bracket sets only have one tier of *ang* and belong to four-*puzuo* (see fig.3.1c-1).

four to six, regardless of the date or the size of the building (fig.3.2e). The only Song building, Feitianzangdian, is also the only building that has four-*puzuo* bracket set, a grade lower than any later buildings in Sichuan. Eight buildings were installed with five-*puzuo* bracket sets. Most of them project either two tiers of *huagong*, such as Yong'anmiao, Pingxianglou, Xiangdian and Main Halls of Lifengguan, Bao'ensi, and Qinglongsi, or two tiers of *ang*, such as Pantuoshidian and the Main Hall of Dubaisi. Five buildings were installed with six-*puzuo* bracket sets. Three of them date to Yuan—Feilaidian, the Main Hall of Yong'anmiao and Wenchangdian, and two of them date to Ming—Main Halls of Guanyuemiao and Doukousi. Except for Feilaidian, whose plan is evidently larger than all others, all these buildings with six-*puzuo* bracket sets do not have anything extraordinary compared to those buildings with five-*puzuo* sets.

(4). *Jixinzao* 計心造 and *touxinzao* 偷心造

A *tiao* in a bracket set can be defined either as *touxinzao* 偷心造 or *jixinzao* 計心造. *Touxinzao* means that no bracket arm parallel to the elevation of the building is built on the *tiao* and *jixinzao* suggests that there is such a bracket arm on the *tiao*. In Jiangnan, except for the bracket sets in Main Hall of Baogusi and the upper eave of Sanqingdian, all *litiao* 裡跳, *tiao* that project from the center line of columns towards the interior, are built with *touxinzao*. However, *litiao* of the bracket sets in Baogusi and Sanqingdian are

designed as *jixinzao* because they do not support the lower purlin, as the other bracket sets do, but the ceiling board instead. Therefore, they need bracket arms parallel to the elevation of the building to buttress the tie beams of the ceiling board structure. With regard to *waitiao* 外跳, *tiao* that projects towards the outside from the central line of eave columns, there are two kinds of composition of *jixinzao* and *touxinzao* on the bracket sets in Jiangnan. The bracket sets of Main Halls of Baoguosi, Baoshengsi, Zhenrusi, Yanfusi and Tianningsi and the upper eave of Sanqingdian belong to the first type whose first *tiao huagong* is built as *touxinzao* and the rest built as *jixinzao*.

Bracket sets of Ershanmen, the lower eave of Sanqingdian, and Main Halls of Zhenrusi and Xuanyuangong, belong to the second type, where every *tiao* is built as *jixinzao*. Since the bracket sets in Ershanmen, Zhenrusi and the lower eave of Sanqingdian are four-*puzuo*, it is reasonable for a four-*puzuo* bracket set to have a bracket arm cross its only *huagong*. However, the bracket sets of Xuanyuangong demonstrate another possibility. Bracket sets of Main Halls of both Baoshengsi and Xuanyuangong are five-*puzuo*. Nevertheless, the Song building at Baoshengsi has one *tiao* of *touxinzao* while the building of Xuanyuangong remodeled in Ming has none. The tradition of *touxinzao* was applied on the first *waitiao* that carried on through Song to Yuan in Jiangnan but disappeared in the Ming period.

In Sichuan, most *waitiao* are built as *jixinzao*. The only exception is Main Hall of

Doukousi, in which the first tier of *huagong* is built as *touxinzao*. With regard to *litiao*, both *touxinzao* and *jixinzao* are applied (see Table 7). We cannot find any regularity in the usage of *touxinzao* and *jixinzao* in Sichuan. They can neither be connected with the date or the number of *puzuo* of the building. In summary, with regard to *waitiao*, *touxinzao* has almost disappeared in Sichuan ever since Song, while it is still built on the first tier *waitiao* of some Jiangnan buildings dated from Song to Yuan. Although most *litiao* in Jiangnan are built as *touxinzao*, in Sichuan, however, *touxinzao* and *jixinzao* are equally applied in *litiao*. It seems that *touxinzao*, a style that is a little older than *jixinzao*¹⁶⁸, are more often used in Jiangnan than in Sichuan. It is evidence that proves the fact that architectural style in Jiangnan is a little hysteretic compared to that in Sichuan.

(5). *Dangong* 單拱 and *chonggong* 重拱

With regard to *jixinzao*, there are two kinds of bracket arm parallel to the elevation of building: one called *dangong* 單拱, single bracket arm, and the other called *chonggong* 重拱, double bracket arm. *Dangong jixinzao* is much more popular than *chonggong jixinzao* through Song to Ming in Jiangnan as well as in Sichuan (fig.3.2c, fig.3.2d and Table 8). In Jiangnan, *chonggong jixinzao* is merely applied on the *waitiao* of the Main Halls of Tianningsi and Xuanyuangong. In Sichuan, only Xiangdian is built exclusively

¹⁶⁸ According to Zhang Shiqing, since the Tang dynasty, bracket sets developed from *touxinzao* to *jixinzao*. *Jixinzao* became dominant in the north by the Northern Song, while *touxinzao* was still used in the south until Yuan dynasty. See Zhang Shiqing 2002,173.

with *chonggong jixinzao*. The other buildings all have either *dangong*, *chonggong* or both of them.

Although *chonggong* is not often used on the projections of bracket sets, it is quite frequently used right on the central line of eave columns as part of the configuration of *fubigong* 扶壁栱. *Fubigong*, also known as *yinggong* 影栱 in the *Yingzao fashi*, is the longitudinal frame of a bracket set directly above a row of columns, which is composed of *sufang* 素方 (a plain beam having a one-*cai* section), *dangong* or *chonggong* and blocks, varying in configurations. According to the *Yingzao fashi*, the configuration of *fubigong* is related to the configuration of the bracket sets, considering the fact whether the bracket set projects a *touxinzao huagong* or a *jixinzao huagong*, whether it has a *chonggon jixinzao* or *dangong jixinzao*, and what is the number of *puzuo*. Figure 3.2f shows five types of configurations of *fubigong* in the *Yingzao fashi* and how they are related to the configuration of the bracket set.¹⁶⁹

Type A belongs to a bracket set which has *chonggong jixinzao* built on all the *waitiao*. A *chonggong* is installed on the capital block with a *sufang* on top in Type A. Type B belongs to a four-*puzuo jixinzao* bracket set or a set which has *dangong jixinzao* built on all the *waitiao*. A *dangong* is installed on the capital block with several *sufang* on top in this type. Type C belongs to a five-*puzuo* bracket set, the first *waitiao* of which is built as *touxinzao*. A *chonggong* is installed in Type C on the capital block with one

¹⁶⁹ For a study of *fubigong* see Xu Yitao's article published in *Gugong wenwu yuekan* 故宫文物月刊 in 1995.

sufang and one *dangong* on top in turn. Type D and Type E both belong to a six or seven-*puzuo* bracket set, the first *waitiao* of which is built as *touxinzao*. Two *dangong* and two *sufang* are alternately built on the capital block in Type D. Type E has one *chonggong* on the capital block with two *sufang* on top.

In figure 3.2g and figure 3.2h, *fubigong* of the buildings in Jiangnan are compared to that in the *Yingzao fashi*. Each bracket set is given a *fubigong* type from figure 3.2f as a reference, based on whether it is composed with *jixinzao* or *touxinzao*, *dangong* or *chonggong* and what is its number of *puzuo*. *Fubigong* of the Song buildings in Jiangnan seems exactly the same as the kind regulated in the *Yingzao fashi*. Main Halls of Yanfusi and Tianningsi have similar configurations of *fubigong* to that of the *Yingzao fashi* except that they have one *dangong* and one *sufang* in addition to support the purlin, as well as Main hall of Xuanyuangong. All four-*puzuo* bracket sets in Jiangnan do not obey the *Yingzao fashi* strictly. They all have a *chonggong* on the capital block, which make them look like Type A instead of Type B, which they are supposed to follow.

Generally speaking, *fubigong* of Song buildings in Jiangnan seems almost identical to those in the *Yingzao fashi*. It is possible that the *Yingzao fashi* itself was written based on the real Song buildings in Jiangnan. When it comes to Yuan, design of *fubigong* still follows the *Yingzao fashi* but, in order to support the purlin, a pair of *dangong* and *sufang* is added to replace *yacaofang* 壓槽方 when necessary. Ming buildings did not change at

this respect, either. With regard to four-*puzuo* bracket sets, the regulation in the *Yingzao fashi* was ignored and craftsmen tended to use *chonggong* instead of *dangong* in the configuration of *fubigong*. Such a practice is also found in Sichuan and it is also applied in bracket sets of five-*puzuo* or six-*puzuo*.

Most buildings in Sichuan are not quite related to the *Yingzao fashi* on this issue. In Sichuan, only five buildings follow the assumed type in *Yingzao fashi* (shaded in yellow, see fig.3.2i). With regard to the rest bracket sets that do not follow the *Yingzao fashi*, seven of them are built as Type A, one is built as Type E and one, Main Hall of Doukousi, is built like nothing in the *Yingzao fashi*. If we compare these bracket sets to the type to which they should correspond in the *Yingzao fashi*, we can find that all the *dangong* in *Yingzao fashi* are converted into *chonggong* in the buildings in Sichuan. Although *dangong* is favored on the projections of the bracket sets, *chonggong* is more preferred in the configuration of *fubigong*.

(6). *Dancai* 單材 and *zucai* 足材

When using the modular unit *cai* to construct the bracket sets, there are two kinds of measurement of *huagong*, one called *dancai* and the other called *zucai*. *Dancai* means the measurement of the section of *huagong* is one *cai*, while *zucai* means the measurement of the section is one *cai* plus one *zhi*. In the *Yingzao fashi*, it is regulated

that *zucai* should be used to build *huagong* of a capital set while *dancai* should be used to built *huagong* of an intercolumnar set. Such construction of *huagong* had already existed in the Song buildings in Jiangnan that were built earlier than the time when the *Yingzao fashi* was published. The width of *huagong* on the capital sets of Main Halls of Baoguosi and Baoshengsi is measured as wide as *zucai* and that in the intercolumnar sets is measured as wide as *dancai* (see fig.3.2j). Undoubtedly, this regulation of *dancai* and *zucai* applied to *huagong* is a Song feature in Jiangnan.

Due to this point, two Yuan buildings, Main Hall of Yanfusi and Ershanmen of Yunyansi, still follow this Song tradition, while Main Hall of Tianningsi is changed. *Huagong* of Tianningsi both in capital and intercolumnar sets are measured as wide as *zucai*. The change is also inherited by later Ming structures. The bracket sets in Zhenrusi and Xuanyuangong only have *huagong* built with *zucai*, and *huagong* of *dancai* in bracket sets disappeared ever after (see fig.3.2k). It is clear that the transformation of *huagong* from both *zucai* and *dancai* to purely *zucai* occurred during the Yuan period. In Sichuan, on the other hand, it seems that distinguishing between *dancai huagong* and *zucai huagong* never exists. All the buildings in Sichuan, dated from Song to early Ming, are installed exclusively with *zucai huagong* both on the capital set and intercolumnar set.

(7). *Xiegong* 斜栱

The earliest extant *xiegong*, oblique arm or fan-shaped arm, can be found in a Song building, Monidian 摩尼殿 of Longxingsi 隆興寺 that is dated to 1052 and located at Zhengding 正定, Hebei. It became very popular during the Song and Jin dynasties in Shanxi and Hebei in China.¹⁷⁰ It is especially considered the signature of Jin architecture. *Xiegong* is not recorded in the *Yingzao fashi* and is also never found in Jiangnan buildings, probably because of the fact that Jiangnan was never within the territory of the Jin Dynasty. It is very interesting that four Yuan and two Ming buildings in Sichuan bear *xiegong* of 45° angles in their bracket sets (see fig.3.21). In Main Hall of Bao'ensi and Main Hall of Qinglongsi, *xiegong* is only applied on intercolumnar sets. With regard to the other four buildings, *xiegong* is built on both capital and intercolumnar bracket sets.

The first bracket sets with *xiegong* in Sichuan date earlier than these Yuan and Ming timber buildings. The earliest examples of *xiegong* in Sichuan are in two Song tombs, Tombs M1 and M2 of Anbing, at Huaying.¹⁷¹ In the tomb chambers, *xiegong* of 45° angle can be seen at many places (see fig.3.2u-1,2,3). *Xiegong* in timber structures can be found in another piece of *xiaomuzuo* dated to Southern Song. Feitianzang, a Daoist revolving bookcase, is decorated by bracket sets composed by exquisite *xiegong* all over

¹⁷⁰ Guo Daiheng 2001, 767

¹⁷¹ An Bing 安丙, a native Hmong born at Huaying, Sichuan, is a Southern Song official who governed Sichuan in 1220. He and his mother were buried together at their hometown, Huaying. During the 1990s, archaeologists excavated their tombs. Anbing's tomb was labeled as Tomb M2 and his mother's as Tomb M1. Both M1 and M2 were constructed during 1222 and 1223 of the Southern Song. See monograph of Anbing's tombs, *Huaying Anbingmu*, 2008.

the structure (see fig.3.2v-1 and 2).¹⁷² These Song pieces suggest that Sichuan craftsmen had been using *xiegong* to compose a bracket set ever since the Song dynasty, probably under the influence from the north. Such a member is selectively used in Yuan and Ming architecture, since not all Yuan and Ming buildings in Sichuan have *xiegong* in their bracket sets. It is easy to understand that Jiangnan never had this member in its history as it was never influenced or penetrated by the Liao or Jin culture.

(8). *Linggong* 令栱

Linggong 令栱, the innermost or outermost arm in a bracket set parallel to a building's elevation, is usually crossed by a *shuatou* 耍頭, an overhanging bracket-end and the topmost member parallel to and above *huagong* and *ang*. However, *linggong* is constructed otherwise in some Jiangnan buildings. Bracket sets of the Main Hall of Baoshengsi do not have *shuatou* that projects across *linggong*. The bracket sets of the upper eave of Sanqingdian have *shuatou* that projects toward inside but not toward the outside. Only the Main Hall of Baogusi has *shuatou* projecting toward the outside (see fig.3.2m).

It seems that *shuatou* completely disappeared in the bracket sets that were built in the Yuan dynasty in Jiangnan. For example, in the Main Halls of Yanfusi and Tianningsi, and Ershanmen of Yunyansi, no *shuatou* is found on their *linggong*. Interestingly, when it

¹⁷² For more details of Feitianzang, see Zuo Lala 2005.

came to the Ming dynasty, *shuatou* was put back on *linggong* again. Both Main Halls of Zhenrusi and Xuanyuangong, and even the lower eave bracket sets of Sanqingdian that are suspected to have been remodeled in Ming, have *shuatou* overhanging across their *linggong* (see fig.3.2m and fig.3.2n).

According to the *Yingzao fashi*, *linggong* is constructed more often with than without a *shuatou*.¹⁷³ *Linggong* without *shuatou* did exist in the Song period in Jiangnan but became widely accepted in Yuan. It is further noteworthy that *shuatou* returned to the bracket sets of the Ming buildings and can be considered a mark to distinguish Yuan bracket sets from Ming bracket sets in Jiangnan. It is surprising that, in Sichuan, except for Feitiaoangdian, the only Song building in Sichuan, *linggong* is found nowhere in Sichuan, saying nothing of *shuatou*. All the topmost *huagong* support *liaoyanfang*, the outermost eave purlin directly without a set of *linggong* and small blocks. The bracket sets built in the Song tombs at Huayin also substantiate this point (see fig.3.2u-1, 2 and 3).

(9). *Angwei tiaowo* 昂尾挑斡 and *angting tiaowo* 昂程挑斡

Intercolumnar bracket set is not directly connected to the roof structure by a major beam as the capital set. Its responsibility is to transfer the load of the lower purlin to the eave column by a diagonal cantilever known as *ang* or, more precisely, *xia'ang* 下昂.

¹⁷³ See Liang Sicheng, *Yingzao fashi zhushii*, juan 4.

There are two ways to design the *xia'ang*. One is known as *angwei tiaowo* 昂尾挑斡, which means the inner end of *xia'ang* inclining upwards to carry a lower purlin, at the same time it also projects toward the outside of the building. The other, known as *angting tiaowo* 昂棖挑斡, is composed the same way at its inner end but does not project toward the outside.

In Jiangnan, *angwei tiaowo* are more popular than *angting tiaowo* from Song to Ming (fig.3.2o). In Main Halls of Baoguosi, Yanfusi, Tianningsi and Xuanyuangong, two *xia'ang* constructed as *angwei tiaowo* are installed, while in Main Hall of Baoshengsi and the lower eave of Sanqingdian, only one *xia'ang* is as *angwei tiaowo* in each intercolumnar set. *Xia'ang* in Main Halls of Baoguosi and Xuanyuangong are parallel to each other, while those of Main Halls of Yanfusi and Tianningsi are not.

There are only two buildings in Jiangnan whose intercolumnar sets are built as *angting tiaowo*. One is Ershanmen of Yuanyansi and the other is Main Hall of Zhenrusi. Ershanmen is a very typical example of *angting tiaowo*. It is installed with one *huagong* but no *ang* projecting toward the outside. In Zhenrusi, however, since *jia'ang*, pseudo-*ang*, is installed at the first projection toward the outside, the intercolumnar bracket set can be mistaken for *angwei tiaowo* at the first glance. The sectional view of Zhenrusi shows that an *ang* that can be seen from the outside is not on the same piece of the *ang* that projects toward the inside. Therefore, it should not be considered *angwei*

tiaowo but *angting tiaowo* instead. Generally speaking, due to a regional tradition, intercolumnar bracket sets constructed during the Yuan period in Jiangnan are more likely to be built as *angwei tiaowo* instead of *angting tiaowo*.

On the other hand, *angting tiaowo* is much more dominant in Sichuan than *angwei tiaowo*. Nine buildings in Sichuan are installed with intercolumnar sets of *angting tiaowo* (see fig.3.2p). *Xia'ang* of these buildings varies in shapes, dimensions and positions. Some of them are curved upward (see Main Hall of Bao'ensi, Wenchangdian of Wulongmiao, Xiangdian of Dongyuemiao and Main Hall of Dubaisi), some are downward (see Main Hall of Lifengguan and Yong'anmiao), and others are straight (see Feitianzangdian, Main Hall of Qinglongsi and Pingxianglou). Some of them look slender and the dimensions of their section are equal to one unit of *cai*, while others are thick and have an irregular shape. Some of them connect the eave purlin directly to the lower purlin (Feitianzangdian, Wenchangdian, Yong'anmiao, and the Main Hall of Dubaisi), while some connect other members parallel to the purlins.

Only four buildings in Sichuan use *angwei tiaowo*: Feilaidian of Dongyuemiao; Main Hall of Yong'ansi; and Pantuoshidian and Main Hall of Guanwangmiao. It is interesting that the *xia'ang* of each building is unique. Feilaidian of Dongyuemiao has only one *xia'ang*, while the other buildings all have two. Pantuoshidian has two layers of *xia'ang*, however, the top layer ends right above the first inner *huagong* and is much

shorter than the bottom one. Although Main Halls of both Yong'anmiao and Guanwanmiao have two layers of *xia'ang* parallel to each other, their structures are a little different. Compared to Guanwangmiao, the bottom layer of *xia'ang* in Yong'ansi is much shorter than its top one. Furthermore, Doukousi is a very bizarre building in Sichuan. Neither *angting t iaowo* or *angwei t iaowo* is used in this building. The intercolumnar sets of the Main Hall of Doukousi just sit on the capital of the eave column without *xia'ang*. It seems that the structural function of the intercolumnar sets had degenerated.

(10). *Shang'ang* 上昂 and *xuexie* 榑楔

Construction of *shang'ang*, a transverse arm of a bracket set which projects from the first-step of the inner projection with its head raised to adjust the height of the bracket set, although it is recorded in the *Yingzao fashi*, is not found outside Jiangnan. It is one of the most remarkable symbols of Jiangnan buildings. *Shang'ang* is installed in the buildings that are dated from Song through Ming periods, which include Main Halls of Baoshengsi, Tianningsi and Zhenrusi and the upper eave of Sanqingdian(fig.3.2q).¹⁷⁴ There are two types of *shang'ang* in Jiangnan. In the first type, as constructed in Sanqingdian and also recorded in the *Yingzao fashi*, *shang'ang* is built as a projection to

¹⁷⁴ The bracket set of the upper eave of Sanqingdian shown in fig.3.1.2l is neither a capital set nor an intercolumnar set. This bracket set with *shang'ang* is installed at the interior of the building to support the ceiling board of the upper eave.

support a *linggong* by itself with a wedge-like member known as *xuexie* 華楔 right beneath it. In the second type that is not recorded in the *Yingzao fashi*, *shang'ang* is constructed below *xia'ang* to adjust the gradient of the cantilever with a *xuexie*, as well. The second type seems more popular than the first one. It is built in Main Halls of Baoshengsi, Tianningsi and Zhenrusi, buildings that are dated from Song to Ming.

The member known as *xuexie* does not always go with *shang'ang* as recorded in the *Yingzao fashi*. It also appears subjacent to *xia'ang* in Jiangnan, such as Main Halls of Baoguosi, Xuanyuangong and Yanfusi and the lower eave of Sanqingdian that are dated to Ming. *Xuexie* of the Main Hall of Yanfusi is worthy of special attention; it is big enough to function as *shang'ang* to adjust the gradient of *xia'ang*. Such a *xuexie*, being a replacement of *shang'ang*, is also called *daxuexie*, great *xuexie*, to distinguish itself from others. *Xuexie* is also employed in many Sichuan buildings. Six buildings in Sichuan, dated from Yuan to Ming, bear *xuexie* in their bracket sets (see fig.3.2r). A *xuexie* in the intercolumnar sets of the Main Hall of Yong'ansi can be considered a *daxuexie* because of its size and its similar function as a *shang'an*.

(11). *Jia'ang* 假昂 and *ejiaodou* 訛角鬥

Considering the structural function of *jia'ang*, the pseudo-*ang*, it is actually a sort of *huagong*, a projecting bracket arm. In Jiangnan, *jia'ang* is only found in the buildings

that are no earlier than Ming. It is installed in the lower eave of Sanqingdian, and the Main Halls of Zhenrusi and Xuanyuangong. All the bracket sets of these buildings are suspected to be remodeled in Ming. In the lower eave of Sanqingdian and Main Hall of Xuanyuangong, *jia'ang* is only installed in the capital sets while in Main Hall of Zhenrusi, it is used both on the capital and the intercolumnar sets (fig.3.2s). *Jia'ang* is also found in five buildings in Sichuan, dated from Yuan and Ming (see fig.3.2t). In these buildings, *jia'ang* is installed both in the capital set and the intercolumnar set.

Ejiaodou, a *ludou* (capital block) with its angles rounded off, is built in the Main Hall of Baoguosi, Ershanmen of Yunyansi and the Main Hall of Xuanyuangong in Jiangnan (fig.3.2w-1, 2 and 3). With convex profile on its corners, it looks more decorative than a normal block. Since it is not discovered elsewhere, it could be a local decoration of Yuan and early Ming buildings in Jiangnan.

3. Roof Structures

(1). *Tingtangzao* 廳堂造 and *diantangzao* 殿堂造

In *Yingzao fashi*, two types of timber building structures have been introduced: one is called *diantang* 殿堂 and the other is called *tingtang* 廳堂. Generally speaking, *diantang* is characterized by eave columns and interior columns of the same height and a structural layer of bracket sets can be easily distinguished from the whole building.

Sometimes a ceiling is installed in a *diantang* building. On the contrary, in a *tingtang* building, the interior columns are higher than the eave columns and there is no distinct layer of bracket sets. Usually a ceiling is not installed in such a building.

According to the definition of *diantang* and *tingtang*, basically, all the Yuan buildings in Jiangnan belong to the *tingtang* type (see fig.3.3a). Their interior columns are higher than the eave columns and they have no distinct layer of bracket sets. However, the Main Hall of Zhenrusi is somewhat exceptional. This building is essentially a *tingtang*, but since a ceiling is installed in its front bays, it has been mixed with a small part of *diantang*. Most Yuan and early Ming buildings in Sichuan are *tingtang*-style buildings (see fig.3.3b¹⁷⁵), since the eave columns are not as tall as the interior columns and there is no unified bracket set layer. One exception is Xiangdian of Dongyuemiao that has no interior column installed. A ceiling board is built above the eave columns, as well as a layer of bracket sets. It can be considered a small-sized *diantang*.

Although Ershanmen of Yunyansi that is located at Suzhou in Jiangnan is constructed for the same purpose as Xiangdian and they both have a long and narrow plan, their roof structures seem based on different notions. In Ershanmen, a typical *tingtang* style building, there is an interior column that is much taller than the eave columns to divide the interior space into two divisions, each spanned by a two-rafter beam. In Xiangdian, on the other hand, a four-rafter beam crosses the whole width of the

¹⁷⁵ The sectional view of the Main Hall of Dubaisi is not available. It is also a *tingtang* style building.

building together with a ceiling board and a layer of bracket sets to reinforce the span.

Features of *diantang*-style buildings are also integrated into some *tingtang* style buildings in Sichuan. The middle bays of Main Halls of Lifengguan and Yong'anmiao are spanned by a two-rafter beam along with a layer of bracket sets built on the interior columns. With regard to Feilaidian, two rows of bracket sets are installed on the interior columns which partially resemble a *diantang*-style building. In summary, the majority of the Yuan and Early Ming buildings in Jiangnan and Sichuan are built as *tingtang*-style buildings, and some of them are partially constructed with some features of *diantang* style. The only *diantang*-style building is found in Sichuan and no *diantang* is hitherto discovered in Jiangnan.

(2). Beams and Rafters

With regard to a *tingtang* building of three bays along its side, the *Yingzao fashi* regulates that its roof structure, from the sectional view, should be crossed by eight rafters, with two *rufu*, two-rafter beams, spanning the front and rear bays, using four columns (*bajia c huanwu qi anhou r ufu y ong s izhu* 八架椽屋前後乳栿用四柱, see fig.3.3c). A typical Song building constructed with this roof structure type is the Main Hall of Baoshengsi (fig.3.3e), located at Luzhi in Jiangsu province.

Surprisingly, most Yuan buildings in Jiangnan are not constructed according to this

type. Main Halls of Yanfusi and Tianniangsi have two *sanchuanfu*, three-rafter beams, crossing the front and middle bays and a *rufu* crossing the rear bay. With regard to the Main Hall of Zhenrusi, the expansion of the front bay is even more exaggerated. Both the front bay and the middle bay of the Main Hall of Zhenrusi have four rafters and the rear bay has two rafters, which makes the building as a ten-rafter hall.

Such alteration of rafter and beam arrangement in the Yuan dynasty is probably inspired by a building such as one in Ningbo, Zhejiang province. The Main Hall of Baogusi (see fig.3.3d) is an eight-rafter hall. However, since a *zaojing* 藻井 (highly decorated and recessed ceiling) has been installed in its front bay, the length of the front bay is enlarged from two rafters to three rafters and the length of the middle bay has been reduced from four rafters to three rafters. This might have inspired the later Yuan craftsmen who had tried many ways to maximize the space of *mingjian* on the facade, where worship of Buddhist ceremonies usually take place.

It seems that early Ming craftsmen in Jiangnan returned to the *Yingzao fashi* tradition on this issue. Two Ming buildings, Jingangdian 金剛殿 of Tianningsi 天寧寺 at Nantong 南通 (fig.3.3f) and Yanzi xiangdian 言子享殿 at Changshu 常熟 (fig.3.3g) are all constructed the same as the standard eight-rafter *tingtang* hall described in the *Yingzao fashi*. The fact that the Main Hall of Xuanyuangong (see fig.1.6i), the only Yuan structure obeying the *Yingzao fashi* standard, was built during very late Yuan or early Ming,

convinces us that Ming craftsmen in Jiangnan either want to revive the regulations of the *Yingzao fashi* or that they had never been lost.

In Sichuan there are more varieties of arrangement of rafters and beams. Four buildings, labeled as Type A (see fig.3.3h), are designed exactly as the standard eight-rafter hall in the *Yingzao fashi*. Their interior space is divided into three rooms, the front and the rear crossed by *rufu* and the middle by *sichuanfu*, four-rafter beams. Main Hall of Lifengguan and Wenchangdian of Wulongmiao, are categorized as another type (see fig.3.3i). Although they look basically like Type A, they are six- and four-rafter halls instead of eight-rafter ones.

Buildings of Type C also have three bays along the side but are only crossed by four rafters in total (see fig.3.3j). They are labeled as another type because they both have one interior column eliminated and the interior space is spanned by one *zhaqian*, one-rafter beam, and one *sanchuanfu*, three-rafter beam. Buildings of Type D are very irregular(see fig.3.3k). The Main Hall of Yong'ansi is an eight-rafter building with three interior columns while Bao'ensi is crossed by ten rafters that are divided by two interior columns as 3-5-2—three in the front bay, five in the middle and two in the rear.

In summary, eight-rafter buildings seem to be a dominant style in Jiangnan,¹⁷⁶ while in Sichuan, buildings vary from four-rafter to ten-rafter. Except for the Main Hall of Xuanyuangong, the front bay of all the buildings in Jiangnan is expanded from

¹⁷⁶ Only Ershanmen of Yunyansi is a four-rafter building, since it is not a Main Hall.

two-rafters wide to three- or four- rafters wide. However, the front bay in most Sichuan buildings is only one-rafter or two-rafters wide, as there has never been a need to widen them. It seems that in the Yuan dynasty, people in Jiangnan tried to expand the front bay, but people in Sichuan tried to expand the middle or the rear bay by eliminating some interior columns.

(3). Beam-bearing members

The major beams in a *tingtang* style building, usually known as *rufu* 乳栿 (two-rafter beam), *dingfu* 丁栿 (T-beam), or *sanchuanfu* 三椽栿 (three-rafter beam), are built to connect the eave columns and the interior columns. These beams are supported by the interior part of a capital bracket set on their ends toward the eave columns, while the other ends are inserted into the shaft of interior columns. According to *juan* 4 of the *Yingzao fashi*,¹⁷⁷ there are a few methods for the interior bracket sets to support the beam. The beams of all the buildings in Jiangnan are buttressed by one (see fig. 3.3l-2, 3 &4) or two (see fig. 3.3l-1&5) layers of *litiao huagong*, *huagong* that project toward the inside. In Sichuan, some beams are supported by one (see fig. 3.3m-9, 10, 11, 13 &14) or two (see fig. 3.3m-12) layers of *litiao huagong*, some by none (see fig.3.3m-3 & 6), some by *shipaigong* 實拍拱, a *huagong* immediately below another member without any bearing block in between (see fig.3.3m-2 & 5), and some by *yatiao* 壓跳, the inner part of a

¹⁷⁷ Liang Sicheng, *Yingzao fashi zhushi*, 2001, 81

huagong that is as long as two projections and is made into a *tatou* 檣頭 (see fig.3.3m-1, 4, 7 & 8). Both *litiao huagong* and *yatiao* have been mentioned in *juan 4* of the *Yingzao fashi* as familiar techniques to support the major beams from the eave columns.

Except for Feilaidian, the major beams in all the Sichuan buildings are simply inserted into the shaft of interior columns without any transitional member. Only Feilaidian has a *yatiao*-like member between its two-rafter beam and interior column (see fig.3.3m-1). In Jiangnan, however, a member that is recorded in the *Yingzao fashi* and known as *dingtougong* 丁頭拱 (a half *huagong* with its tenon at the rear mortised into a column) is universally used to support the major beams from the interior column (see fig.3.3l). In the Main Hall of Xuanyuangong, there are even two layers of *dingtougong* installed in the interior column to support its *rufu*.

In summary, with regard to the way of supporting major beams, it is highly standardized in Jiangnan that both ends of a major beam should be supported by *huagong* and *dingtougong*. In Sichuan, however, there are more varieties in dealing with this problem. Craftsmen in Sichuan would use *shipaigong*, *yatiao*, or even nothing to connect a major beam and a column.

(4). *Yueliangzao* 月梁造

Yueliang, crescent beam, is a type of artistically crafted beam with both its top and

bottom profiles curved slightly downward. The way to make its curved profiles has been illustrated in *juan 5* of the original version of *Yingzao fashi* (see fig.3.3l). Regardless of the length of *yueliang*, the middle part of its body is straight but both its top and bottom on its both ends are curved downward and are symmetrical from left to right. Moreover, according to *juan 5* of *Yingzao fashi*, in terms of a *diantang*-style building, *mingfu*明袱, a visible main beam that is below the ceiling board, is usually processed as *yueliang*, playing a decorative member. *Caofu*草袱, the beam above ceiling board and invisible in the room, on the other hand, is not processed into any decorative shape and its shape is called *zhiliang*, straight beam. Based on Liang Sicheng's comment on this issue, if a beam is shaped as *yueliang*, it is merely decorative and does not help to carry the load of the roof structure.¹⁷⁸ However, this is not the case in terms of a *tingtang*, whereas all the beams are *mingfu*. They can be decorative members as well as structural members.

Buildings in Jiangnan are all *tingtang* style and their exposed beams, *mingfu*, are all built as *yueliang* (see fig.3.3m1-6). However, some *yueliang* are slightly different from others. The two-rafter *yueliang* at Ershanmen has no downward curved profile (fig.3.3m-5). The three-rafter crescent beam in Main Hall of Zhenrusi seems quite rigid other than being curved. It can still be defined as a *yueliang* only because of the curved profiles on its two ends (fig.3.3m-4). The one-rafter beam, *zhaqian*, in Yanfusi is quite special among all crescent beams in Jiangnan. Instead of being treated as a normal beam

¹⁷⁸ Liang sicheng, *Yingzao fashi zhushi*, 2001, 121-124

that is usually horizontal, it is not only curved downward but slanted upward, as well. The curved profiles of these *zhaqian* are even exaggerated. Such diagonal *zhaqian* has not been found any way other than that at Yanfusi.

In contrary to Jiangnan, although all the buildings in Sichuan are *tingtan*-style and their beams are *mingfu*, as well, the beams in Sichuan are not treated as *mingfu* in shape of *yueliang* but as *caofu* in shape of *zhiliang*. To be more accurate, the beams in Sichuan are not absolutely “straight”. They are merely unshaped wooden pieces without much decorative profile. In terms of this issue, the buildings in Sichuan go against the rules in *Yingzao fashi*.

(5). Timber members atop eave columns

In contrary to *fu* 袱, short beams that are parallel to the rafters and fastened the building from longitudinal directions, column-top tie beams that are parallel to the row of eave columns fasten the building from lateral directions. The most familiar column-top tie beam is known as *lan'e* 闌額, which is defined in *juan 5* of the *Yingzao fashi* to be as thick as two *cai* and its ends cannot project beyond the column. *Yan'e* 簷額 is a variety of *lan'e* mentioned in the *Yingzao fashi*. It is thicker than two *cai* and its ends do project beyond the columns. Besides *lan'e* and *yan'e*, we can also find *pupaifang*, *you'e*, *chuomufang*, *dianban* or even *shuzhu* installed along with *lan'e* or *yan'e* atop the eave

columns to help fasten the structure.

Table 9 lists all these members and shows how they are differently employed in the buildings in Jiangnan and Sichuan. It seems that the configuration of members atop eave columns in Jiangnan is highly distinguished from that in Sichuan. It is quite simple and standardized in Jiangnan, but has many varieties in Sichuan. Four members in Table 9 never exist in the Yuan buildings in Jiangnan but are applied on the buildings of the same period in Sichuan. First, *yan'e* that replaces *lan'e* in many places in Sichuan is never used in Jiangnan. Second, *chuomufang*, a short beam immediately under and parallel to a *lan'e* or *yan'e* to provide an extra support and lessen the clear span between columns, and that is also recorded in *juan 5* of the *Yingzao fashi*, is not found in any Jiangnan building but in four buildings in Sichuan. Moreover, *shuzhu*, short pillars, though not recorded by the *Yingzao fashi*, are also used in Sichuan as extra support for the intercolumnar bracket sets on *pupaifang*, but not in Jiangnan.

The last issue does not concern a timber member, but the way to process a member. In Sichuan, many *lan'e* or *yan'e* are arched downward, which is called *yueliangzao* 月梁造, a crescent style, but all the *lan'e* in Jiangnan are extremely straight. It is very interesting that *fu*, the short beams parallel to the rafters, are crescent in Jiangnan but straight in Sichuan, while *lan'e* and *yan'e* are crescent in Sichuan but straight in Jiangnan. This issue can be explained by the different building plans in Sichuan and Jiangnan. In

Sichuan, in order to expand the interior space, people tend to remove columns to increase the lateral width of a bay—for instance, as at the Main Hall of Lifengguan (fig.2.1a), Feilaidian(fig.2.2b) and Pantuoshidian (fig.2.8b). In Jiangnan, on the other hand, people tend to expand the longitudinal width of a bay by increasing a two-rafter beam into a three- or four-rafter beam—for instance, as in the Main hall of Zhenrusi (fig.1.3c). Since a crescent beam can provide a stronger span than a straight beam, the crescent beam is applied whichever side of a bay is expanded.

Three members in Table 9 are more often used in Sichuan than in Jiangnan. *Pupaifang*, a flat beam that rests directly on a *lan'e* or *yan'e*, is not mentioned by the *Yingzao fashi*. In Sichuan, *pupaifang* is installed in every building but Pantuoshidian. In Jiangnan, however, *pupaifang* is only used in the Main Halls of Zhenrusi and Xuanyuangong. *Dianban*, filler board, is also more often used in Sichuan than in Jiangnan. *Dianban* used in Jiangnan is also different from those used in Sichuan. Since many *yan'e* or *lan'e* in Sichuan are curved downward, causing an irregular space between *yan'e* or *lan'e* and *pupaifang*, this area is better filled by a *dianban*. In Jiangnan, however, there is no such room because the *lan'e* is not crescent. The only *dianban* used in Yanfusi is for the space between *lan'e* and *you'e*, a subsidiary beam that is recorded in the *Yingzao fashi* in the same paragraph of *lan'e*. *You'e* is used in two buildings in Jiangnan and three buildings in Sichuan. It is usually situated at a proper height under a *lan'e* or

yan'e.

(6). *shuzhu* 蜀柱 and *tuofeng* 駝峰

Shuzhu, dwarf pillar, and *tuofeng*, camel hump, are architectural members usually placed above a beam to receive the end of a higher-level beam and to support a ridge or a purlin, as well, usually through a *ludou*, cap block, with a bracket set on top. In Jiangnan, *shuzhu* and *tuofeng* are both used in the Main Halls of Yanfusi, Tianningsi and Zhenrusi, which were built between 1310 and 1320. For buildings built in later time, such as Ershanmen (1338) and Main Hall of Xuanyuangong (late Yuan or early Ming), there is no *shuzhu* or *tuofeng* installed at all. A capital block with a bracket set, instead, is put directly on the beam to support the end of a high-level beam or a purlin (see fig. 3.3p).

In Sichuan (see fig. 3.3q), on the other hand, *shuzhu* are used in all the buildings dated from Yuan to Early Ming in different sizes except for Xiangdian, an early Ming gate hall. *Tuofeng*, however, is not often seen in Sichuan. Doukousi is the only building in Sichuan that use *tuofeng* in the roof structure. Putting a capital block with a bracket set directly on a beam, such as people did in Ershanmen and Xuanyuangong in Jiangnan, has never been seen in Sichuan.

The shape of *tuofeng* in Jiangnan and Sichuan are also different. Compared to the only *tuofeng* found in Doukousi, *toufeng* in Jiangnan is much thinner. Moreover, the

profile at the bottom of *tuofeng* in Jiangnan is curved inward, while in Sichuan, it is curved outward (see fig.3.3p-1 and fig.3.3q). The shape of the bottom of *shuzhu* is also different. In Sichuan, some *shuzhu* have a simple pointed end, some have a plain curved end, and others have no special profile at the end of *shuzhu*. In Jiangnan, there are more decorative lines carved at the bottom of *shuzhu*. Such decorative shapes of *shuzhu* found in Main Halls of Yanfusi, Tianningsi, and Zhenrusi are described by Zhang Shiqing as *yingzui* 鷹嘴, beak of hawk, which is considered a character of southern China architecture since Yuan and is also found in some contemporary Japanese buildings.¹⁷⁹

(7). *Suozhu* 梭柱 and *zhuchu* 柱礎

According to the *Yingzao fashi*, both ends of a column should be tapered on both sides with a slightly convex curving profile in order to make the top end of the column as wide as the bottom of *ludou*, the cap block sitting directly on the column top, and have a convex, less curving profile at the bottom of the column.¹⁸⁰ Such a column is known as *suozhu*. Almost all the columns of a Song, Yuan, and Ming period building is tapered at the top, but columns tapered at both ends like those described in the *Yingzao fashi* are only found in Jiangnan. Although it is recorded in the *Yingzao fashi* as a feature of “official style”, since it is found nowhere else, it is regarded as a regional style by modern

¹⁷⁹ Zhang Shiqing 2003,155

¹⁸⁰ Liang Sicheng, *Yingzao fashi zhushi*, 2001, 137

scholars.¹⁸¹ Among the Yuan buildings in Jiangnan, we can find *suozhu* in the Main Halls of Yangfusi, Tianningsi and Xuanyuangong (see fig. 3.4d).

Zhuchu (the stone column base) are also quite different in Sichuan and in Jiangnan. In the *Yingzao fashi*, *zhuchu* is basically composed of four parts—plinth, the square base underneath the ground, *fupen* 覆盆, usually carved with decoration and above the ground, *penchun* 盆唇, the thin layer above *fupen*, and *zhuzhi* 柱欂, the top part right under the wooden column (see fig.3.4a).

In Jiangnan, there are four types of *zhuchu* (see fig.3.4b). Type I, found in the Main Halls of Yanfusi and Zhenrusi and the stone hall at Jijiansi, looks similar to that in the *Yingzao fashi*—it consists of a plinth, a decorated or plain *fupen* and a stone *zhuzhi*. Stone column base of Type II, on the other hand, do not have a *fupen*, with a stone *zhuzhi* installed directly on the plinth. Compared to Type II, the cylindrical part of *zhuzhi* in Type II is taller than that in Type I. In Type III, however, the cylindrical part is even taller than that of Type II. Type IV, the column base in Xuanyuangong, is the only one that has a wooden *zhuzhi*, which, according to *juan 1* of the *Yingzao fashi*, had already disappeared when the book was written in the Song dynasty. Although there are various types of *zhuchu* in Jiangnan, they share one common feature—they all have *zhuzhi* and the transformation of *zhuzhi* in Jiangnan suggests that it is a very important component in

¹⁸¹ *Suozhu* had already disappeared by the Tang dynasty in the north. Since no timber building earlier than the Tang Dynasty is discovered so far, *suozhu* is only found in Jiangnan and became a typical feature of Jiangnan timber building. (See Zhang Shiqing 2003, 166)

column bases in Jiangnan.

In Sichuan, a few buildings do not have column bases at all—in Pantuoshidian and the Main Halls of Lifengguan, Doukousi, and Dubaisi, the columns are built directly into the ground. For the rest, there are three various types of *zhuchu*: Type V, found in Feilaidian and Main Halls of Yong’ansi and Qinglongsi, merely have a plain *fupen* above the plinth without *penchun* and *zhuzhi*; Type VI, found in Pantuoshidian, Xiangdian, Wenchangdian of Wulongmiao and the Main Hall of Bao’ensi, has both *fupen* and *penchun*, but still no *zhuzhi* installed; Type VII, found in Yong’anmiao and the Main Hall of Guanwangmiao, still has no *zhuzhi*, but its plinth is heightened about 10 cm above the ground. Based on the above description of types of column bases, the major difference of *zhuchu* between Jiangnan and Sichuan is that *zhuzhi* is prevalent during Yuan and Early Ming in Jiangnan, but seems never to have existed in Sichuan in the same period.

4. Conclusion

Comparing the buildings in Jiangnan to those in Sichuan, we can find that they both have distinctive styles of their own. Although they share some common features, generally speaking, Yuan buildings in Sichuan and Jiangnan are constructed under different architectural styles and tastes (see Table 10). Yuan buildings in Jiangnan are based on construction principles in the *Yingzao fashi*. Regularity in transformations of

grades of *cai*, numbers of intercolumnar sets and layer of bracket sets can be easily figured out, which also in accord with the general regularity of timber architecture development in China from Song to Ming, which is based on a decrease in dimensions of the modular unit. Moreover, buildings in Jiangnan dated to Song, Yuan and Ming discovered so far are carefully constructed, decorated, and retain their original features. They share many common features with each other and preserve some hysteresis features that are found in architecture in early Song or even earlier. Buildings in Sichuan, by contrast, less carefully follow *Yingzao fashi*, are more casually constructed, less decorated and show more signs of restoration. It seems that the *Yingzao fashi* did not have much influence in Sichuan and that Yuan architecture in Sichuan is a sort of fusion of Song, Jin and Yuan architecture from the north. This point will be further explained in the next chapter.

CHAPTER FOUR

YUAN BUILDINGS ALONG THE MIDDLE YANGTZE RIVER AND IN THE NORTH

The first section of this chapter involves Yuan and early Ming architecture, including both timber and non-timber buildings, in the area along the middle Yangtze River, which includes Hubei and Anhui provinces. In the second section, I shall compare the Yuan architecture in the north to that in Jiangnan and Sichuan. In addition to Yuan architecture, I will also discuss important timber buildings in the north that were dated to Song, Liao or Jin periods when necessary.

1. Yuan architecture in Wudangshan 武當山

Wudangshanshan is a small mountain range in Hubei province along the middle Yangtze River (see Map 6). The mountain is well-known for many Daoist monasteries and is regarded as an academic centre for research, teaching and practice of Daosim. It attracted attention from the imperial court as early as in the Eastern Han dynasty (25–220 CE). The first site for worship was constructed during the Tang dynasty (618–907).¹⁸²

Wudangshan became the pilgrimage site of Xuanwu 玄武¹⁸³ during the Northern Song dynasty, through the Daoist texts since *Yuanshi Tianzun s huò B eifang Z henwu*

¹⁸² For a concise history of Daoist pilgrimage to Wudangshan, see Lagerway 1992, 293-332.

¹⁸³ Xuanwu 玄武 (literally "the Dark Martiality"), posthumously known as Xuantian Shangdi 玄天上帝 (Dark Heavenly Upper Emperor), as well as Zhenwu Dadi 真武大帝 (True Warrior Grand Emperor), is one of the high-grade Daoist deities, and one of the most revered Daoist deities in China. He is revered as a powerful god, able to control the elements and capable of great magic. He is particularly revered by martial artists. Since the third Ming Emperor, Zhu Di 朱棣, claimed the help of Zhenwu (Xuanwu) in his war to take over the Ming Empire, monasteries were built by Imperial Decree in Wudangshan, where he allegedly attained immortality. For a general study of the cult of Xuanwu, see Boltz 1987, 87-88.

*miaojing*元始天尊說北方真武妙¹⁸⁴ (Primeval Lord of Heaven Explains the Northern True Warrior Miracle Scripture). In the reign period of Xuanhe宣和 (1119-1125), the main architectural complex of Wudang, Zixiaogong紫霄宮 (Purple Heaven Palace), was built for Xuanwu. The cult of Xuanwu turned out to be even more prevalent in the Southern Song. Unfortunately, monasteries and palaces on Wudangshan were damaged and abandoned during the chaos of the Song-Yuan war. Worship of Xuanwu in Wudangshan was resumed by the Yuan imperial court as usual. Construction of monasteries and temples again became active.¹⁸⁵ Many worship sites built during the Yuan period are explicitly related to Xuanwu.

Most palaces and temples on Wudangshan surviving today were built as part of organized complexes during the Ming Dynasty (14th–17th centuries). Only three Yuan buildings survive that are credible Yuan buildings, all discovered hitherto in Hubei province. Although none of them is a timber building,¹⁸⁶ they imitate timber structure in many ways.

(1). Xiaotongdian小銅殿 (smallbronze hall,1307)¹⁸⁷

Xiaotongdian is the first metal structure and is copper. Bronze buildings seem

¹⁸⁴ The earliest Daoist texts that personifies Xuanwu.

¹⁸⁵ In the seventh year of the Dade reign period, Xuanwu was granted another title, Yuan shengren xuantian shangdi 元聖仁威玄天上帝 (Dark Heavenly Upper Emperor of Benevolence and Might) by Emperor Chengzong of Yuan. See *Yuanshi*, juan 21, 456

¹⁸⁶ This is probably the reason why they survive: stone and metal buildings are more durable than timber structures.

¹⁸⁷ See a detailed study on this small copper building in Zhang Jianwei, 2010. Zhang's dissertation research is a general study focusing on ancient metal architecture in China based on archaeological investigation and scientific analysis.

rather unique in Chinese architectural history, a tradition dominated by timber frame architecture. Copper architecture, usually built with an alloy of copper, tin and lead, imitates the style of timber architecture like other non-timber buildings, such as stone and brick structures. There were in total more than ten copper buildings from Yuan, Ming and Qing dynasties in China, of which six survive today. The oldest one is Xiaotongdian/小銅殿. According to the inscription found on the building, it is dated to 1307 of the Yuan dynasty. Since no evidence can prove whether a copper building ever existed before the Yuan dynasty, this copper building in Wudangshan is probably the earliest copper building ever built in the architectural history of China.

Xiaotongdian was originally located on Tianzhufeng 天柱峰, Peak of Heaven Pillar, the highest peak of Wudangshan. It was originally built to worship Xuantian shangdi 玄天上帝. By legend, Xuantian shangdi ascended to heaven right from Tianzhufeng. During the reign period of Yongle 永樂 (1403-1424) of the Ming dynasty, Xiaotongdian was replaced by another copper hall that was much more magnificent. This Yuan copper building was relocated to Xiaolianfeng 小蓮峰, Little Lotus Peak. The Xiaotongdian we see today on Xiaolianfeng is not a single building. It is enclosed by another brick-and-timber building, Zhuanyundian 轉運殿, also called Zhuanchendian 轉辰殿. Xiaotongdian itself not only functions as architecture to enshrine an idol, but becomes an enshrined idol itself. Today, people enter Zhuanyundian, where Xiaotongdian

stands in the center, and start to circumambulate the copper hall to get rid of bad luck.

The small copper hall, currently inside Zhuanyundian, is oriented east west with an entrance facing east. It has the same orientation as its Ming replacement on Tianzhufeng, another copper hall known as Taihegong jindian太和宮金殿 (Golden Hall of Taihe Palace). Xiaotongdian's squarish plan is about 2.61 meters long and 2.56 meters wide (see fig. 4.1a). The facade is one-bay wide and the side is divided by one column into two bays. Zhuanyundian, the outer building, is merely a little bigger than the copper hall, which generates a very narrow corridor between the copper hall and the outer building. The corridor is so narrow that it can only allow one person to pass through at a time.¹⁸⁸ A *xumi* (*Sumeru*) altar made of bluestone is put at the back center of the hall, enshrining the statue of Zhenwu Dadi.

From the facade (see fig.4.1b), we can see that the building rests on a *xumi* terrace about one meter high. Four door panels are installed on the facade. The corner columns are built on drum-type bases with lotus pedal patterns all over them. The building is covered by a *xuanshan* roof, a two-sloped roof which projects beyond the gable walls at both ends. More intriguingly, the ridge of the building is decorated with images of constellations in positive scribing. From left to right, there are Nandou南斗(the Southern Dipper, also known as Sagittarius), a three-star image representing Sanqing三清,the

¹⁸⁸ This narrow corridor is the origin of the new function of the copper hall. Worshippers enter Zhuanyundian and get through the narrow corridor to "have a change of luck", known as *zhuanyun* 轉運 in Chinese.

Three Daoist Purities, and Beidou北斗, the Northern Dipper.¹⁸⁹

The roof framework is composed of alloy members, piece by piece, and mimics timber members in many ways (see fig. 4.1d). It is two-bays wide and has one tie beam, *chuanchafang* 穿插枋, spanning each bay. Two eave purlins and one ridge purlin directly rest on the columns, without transitions of bracket set. *Yueliangzao wunei'e* 月梁造屋內額, a crescent interior column-top tie beam can be seen in the north-south sectional view (see fig. 4.1c). Such a simple roof structure can be defined as *chuandou* 穿鬥 style (a type of building structure with purlins resting directly on columns, and with tie beams tying the columns together in the transverse direction). Its missing rafters are the only thing that differentiates the copper building from a timber one. Flat roof tiles, also made in alloy, directly rest on the purlins instead of on rafters.

This copper hall is an excellent example of Yuan metal architecture. Since doing later alteration on metal buildings is much more difficult than on timber buildings, this copper hall preserves exceptionally authentic information of what a small-scale Yuan building may have looked like in the middle Yangtze River region. In terms of the fact that no bracket sets are used in this building, there are two possibilities. First, since the structures of the bracket sets are extremely complicated, technique of metal casting at that time might not be advanced enough to make bracket sets. People probably simplified the building by removing bracket sets for economic reasons. Second, it is also possible that

¹⁸⁹ For detailed discussion of these images of constellations, see Zhang Jianwei's article.

bracket sets are not standard for such small-scale buildings, even for timber architecture, in *chuandou* style.

(2). Tianyi zhenqinggong 天乙真慶宮(1286-1313)

Another well-known Yuan building at Wudangshan is a stone hall named Tianyi zhenqinggong, which is considered the biggest extant stone hall that imitates timber structure in China. According to the legend of Zhenwu dadi 真武大帝, after his ascension, the place he lived in heaven was called Tianyi zhenqinggong. Obviously, this is another building built for Zhenwu dadi. Construction started from the twenty-third year of Zhiyuan 至元 reign period (1286) and finished at the first year of Yanyou 延祐 reign period (1314).

Similar to *Xiaotongdian*, in order to be well preserved, the stone hall of Tianyi zhenqinggong was also enclosed by a timber hall built later (see fig.4.1f). Compared to the copper hall, Tianyi zhenqinggong is even more like a timber hall: it is three-bays long and three-bays wide with bracket sets under both front and side eaves (see fig.4.1e). All the bracket sets on the facade are regarded as intercolumnar sets because there is no eave column (see 4.1e-1). On the facade there are in total eight identical five-*puzuo* bracket sets without *ang*(see 4.1i). It is remarkable that they both have *xiegong* 斜栱, an oblique arm, at a 45 degree angle to the facade. Two *xiegong* project from the capital set and help

the first tier *huagong* 華拱 in the middle support the traversal bracket on the second tier that also projects five brackets forward: one is orthogonal toward front and two are oblique toward a 45 degree angle to the facade. The bracket sets of Tianyi zhenqinggong recall those in the Main Hall of Qinglongsi and Yong'anmiao, Yuan timber buildings in Sichuan (see figs. 2.5j&k). Their bracket sets look very similar to each other because they both have oblique arms toward a 45 degree angle and no *ang* is installed.

Inside the building, we can find typical members of a timber building: crescent *rufu* 乳枋, together with *shunfuchuan* 順枋串 (a horizontal timber which connects a pair of columns, located below and parallel to the main beam to provide additional resistance to the movement of columns, see fig.4.1g), and *chuandu chuomu* 蟬肚綽幕, (a beam with an underside shaped with a succession of rings like a cicada's abdomen, see fig. 4.1h), under *wunei'e* 屋內額 (interior column-top tie beam).

(3). Xiaoshidian 小石殿 (small stone hall)

The third Yuan building in Wudangshan is a very humble stone hall (see fig.4.1l). Except for the hip-gabled roof, *xieshan* 歇山, we cannot find many characteristics of timber architecture in this building. It does not have columns, which define bays and no bracket sets are installed. It seems to have been constructed in a very rough way.

(4). Conclusion

We learn something about the metal buildings through comparison with stone ones. Stone buildings in Jijiansi 寂鑒寺, Suzhou, Jiangsu province, are good references for these three non-timber buildings in Wudangshan.¹⁹⁰ Undoubtedly, all the stone buildings are built in Yuan and they are non-timber structures imitating timber structures to varying degrees. However, there are some noticeable differences among these two places.

First, stone buildings in Wudangshan and in Jijiansi are fundamentally constructed in different ways. Buildings in Jijiansi, like Xitiansi 西天寺 for example (see fig.1.5g-j), seem to have been chiseled from one monolith. The wall is not composed of brick-like pieces. In Wudangshan, on the other hand, walls of stone buildings are obviously *bricked* with pieces of stone (see fig.4.1i and fig.4.1l).

Second, the stone and copper buildings in Wudangshan represent more characteristics of timber structure than Xitiansi does. For example, Tianyi zhenqinggong has bracket sets installed with diagonal brackets, and together with Xiaotongdian, it is also installed with crescent beams or tie beams, which are one of the ways a timber beam is treated. Interestingly, neither bracket sets nor crescent beams are found in Xitiansi, which, from my point of view, is not caused by technical difficulties.¹⁹¹ *Zaojing* 藻井, a highly decorated and recessed ceiling, is still made in Xitiansi, which suggests that

¹⁹⁰ For a study on Jijiansi, see Chapter 1, section 5.

¹⁹¹ Xitiansi seems to have been chiseled from a monolith that require considerable masonry skill.

builders of Xitiansi already had command of the technique of mimicing timber structure for even very complicated details, let alone crescent beam and simple bracket sets. My speculation is that builders of Jijiangsi intentionally avoid imitating local timber buildings in some details, given the fact that, different from most Jiangnan monasteries, Jijiangsi is not a Chan Buddhist monastery. It is a small temple for esoteric Buddhism.

In summary, in terms of similarities to timber structure, non-timber buildings in Wudangshan indicate that the Yuan buildings in that area may share some features both with Sichuan and with Jiangnan, given the discoveries of bracket sets with diagonal bracket arms without *ang* that recall Yuan buildings in Sichuan, and the crescent beams that recalls the Yuan buildings in Jiangnan.

2. Ming buildings in Anhui

In Anhui province, there are very few recognizable Yuan buildings discovered so far that are in good condition. Therefore study of Yuan architecture in Anhui is a difficult project. Fortunately, the Anhui province is well-known for its large groups of ancient dwellings and magnificent ancestral halls among them for patriarchal clans. Many of these buildings are dated to the Ming dynasty, which would also help us to get a rough picture of the Yuan-Ming architecture in Anhui.

Lexutang Menlou 樂敘堂門樓, the Gate House of Lexu Hall (an ancestral hall for

Clan Wang 汪氏), is one of the early Ming buildings in Anhui (see fig. 4.1m-5). It is built in the first year of Yongle 永樂 reign period (1403) and is the centerpiece of Hongcun 宏村, a village in south Anhui and very close to the mountain of Huangshan 黃山 (see Map 6). Several architectural members of the Gate House of Lexutang resemble the Yuan buildings in Jiangnan.

First, *dingtougong* 丁頭栱 (a half *huagong* with its tenon at the rear mortised into a column) is used in the Gate House everywhere (see fig.4.1m-3). *Dingtougong*, as one of Jiangnan's most arresting features regarding Yuan architecture, merely functions as a beam-bearing member in Jiangnan (see fig. 3.3l).¹⁹² In the Gate House of Lexutang, however, usage of *dingtougong* is not limited to beam supporting. Since no *ludou*, capital block, is installed in this building, all the bracket arms that have to be connected to columns or *shuzhu*, are made as *dingtougong*, with their rear parts directly mortised into the shaft of the column.

Second, crescent beam, another feature of Jiangnan Song and Yuan buildings, is also installed in the Gate House (see fig. 4.1m-6). Moreover, a part of column base, known as *zhuzhi* 柱欂 (see fig.3.4b), that was prevalent in Jiangnan but never existed in Sichuan, is also found in the Gate House, and it was made of wood. According to *juan 1* of the *Yingzao fashi*, wooden *zhuzhi* had already disappeared when the book was written and it is only found in the Main Hall of Xuanyuangong in Jiangnan.

¹⁹² See Chapter 3 Section 3 (3).

Interestingly, the Gate House also has some features that recall some Yuan buildings in Sichuan. For example, the *lan'e* of the House is curved downward (see fig. 4.1m-2), like a crescent member, which can be seen in eight Yuan and Early Ming buildings in Sichuan (see Table 9). Another noticeable member is *xiegong*, the diagonal bracket arm, which is seen in six buildings in Sichuan (see fig.3.2l) and Tianyi zhenqinggong in Wudangshan (fig.4.1i). Since *xiegong* never exist in Jiangnan, it is an important factor that differentiates buildings in Sichuan from in Jiangnan.

Other Ming buildings in Hongcun, although built much later, still share many stylistic features with the Gate House of Lexutang, such as the usage of *dingtougong*, *xiegong*, crescent beams and etc. It is obvious that early Ming buildings in Anhui, similar to those non-timber buildings in Wudangshan, share architectural features both with the Yuan buildings in Sichuan and with those in Jiangnan, especially regarding members of *xiegong* and *yueliang*.

3. Yuan buildings in the North

Compared to the Yuan buildings in the south, Yuan buildings surviving in north China, most of which are located along the Yellow River, such as in Hebei, Shanxi and Shaanxi provinces, have been comprehensively studied for decades by scholars ever since the 1930s because of the abundant remains. Pan Guxi summarizes in his book on Yuan

and Ming architecture that it was in the Yuan dynasty that the architectural difference between the north (the Yellow River areas) and the south (the Yangtze River areas) was further expanded. He suggests that both the techniques and artistic performance of this period drastically transformed, especially at the aspects of the beam and column system, modular measurement of the bracket, etc. Artistically, Chinese timber architecture transformed from a luxuriant style to a plain style during the Yuan dynasty, which is symbolized by the fact that decorative members began to be differentiated and independent from structural members.

In general, Pan Guxi believes that Yuan architecture in the north is developed on the basis of Jin architecture, while Yuan buildings in the south are based on Song architecture that was originally in the south.¹⁹³ In other words, the difference between Yuan architecture in the south and north is caused by the difference between Jin architecture in the north and Song architecture in the south during the eleventh and twelfth century. Nevertheless, this is not exactly the case if considering Sichuan as part of south China. The situation in the south (along the Yangtze River) is much more complicated than Pan Guxi expected. This section explores the Yuan architecture in the north and it will be compared with the architecture in Sichuan and Jiangnan respectively.

There are more than one hundred Yuan buildings surviving in the north. Those abundant remains include a variety of types of architecture from monasteries and temples,

¹⁹³ Pan Guxi 2001,428

to municipal buildings and theatric stages. Moreover, two complete architectural complexes of Yuan also survive, such as the Daoist monastery Yonglegong永樂宮¹⁹⁴ and the Buddhist monastery Guangshengsi廣勝寺¹⁹⁵ in Shanxi. These two monasteries provide valuable information about how the Yuan architecture is constructed differently in the same complex but for different function and hierarchies. Remains in north China are sufficient for a stylistic study of the Yuan architecture.

Zhang Yuhuan wrote an important article regarding Yuan timber architecture in Shanxi in 1979.¹⁹⁶ He suggests that in Shanxi, a large number of Yuan buildings were reconstructed based on the remains of Song and Jin buildings. He categorizes the Yuan timber buildings into two groups based on the styles of the roof structure: one is named as *chuantongshi*傳統式, the conventional style, and the other is named as *da'eshi*大額式, the style featured by the big column-top tie beams. Zhang Yuhuan makes a very important point that *da'eshi*, which is thought to be a characteristic of Yuan architecture in Shanxi, was originally invented in the Jin Dynasty.¹⁹⁷ Examples of Yuan buildings in the north will be discussed in this section regarding their layouts, configuration of bracket sets and design of roof structure. Zhang Yuanhuan's theory of *chuantongshi* and *da'eshi*

¹⁹⁴ Yonglegong, the Daoist Place of Eternal Joy, is currently located in Ruicheng of Shanxi province. It is a very important Yuan Daoist Monastery related to the Quanzhen sect 全真教. It is not only significant for its well-preserved Yuan architecture, but for its precious Daoist wall paintings as, well. See Du Xianzhou, 1963.

¹⁹⁵ The complex of Guangshengsi, including Upper Guangshengsi 上廣勝寺, Lower Guangshengsi 下廣勝寺 and Shuishennmiao 水神廟 (Water God's Temple), is located in Hongdong County in south Shanxi province. For a complete study of Guangshengsi, see Chai Zejun 柴澤俊 and Ren Yimin 任毅敏, *Hongdong guangshengsi*, 2006

¹⁹⁶ Zhang Yuhuan (1979). Zhang made an mistake in his article. He confused the concept of *diantang* and *tingtang*. His *diantang* does not mean a *diantang* style, but a term generally referring to any style of timber building.

¹⁹⁷ Zhang Yuhuan 1979,72

will also be incorporated into the discussion of the features of the roof structure.

(1). Plan and Columniation

Both squarish plan and rectangular plan exist among those Yuan buildings in the north. In contrast to Sichuan and Jiangnan, where squarish plans are only found in Buddha halls of three bays wide, squarish plan can be both five-by-five bays, such as Mingyingwangdian明應王殿 of Shuishenmiao水神廟 of the Lower Guangshengsi廣勝下寺¹⁹⁸, and three-by-three bays, such as the Main Hall of Erlangmiao二郎廟正殿¹⁹⁹ and the Main Hall of Longtianmiao龍天廟正殿²⁰⁰ in the north (see fig. 4.2a). In addition to squarish plans, we can also find rectangular buildings that are as wide as five bays or seven bays, such as Chunyangdian純陽殿 in the complexes of Yonglegong, the Main Hall of Lower Guangshengsi and the Main Hall of Guangjisi廣濟寺大殿 (see fig. 4.2b).²⁰¹

A widely accepted feature of Yuan architecture is the application of *jianzhuzao* 減柱造 (eliminated-column style) and *yizhuzao* 移柱造 (displaced-column style), which has been discussed several times in the previous chapters. Following the tradition of the

¹⁹⁸ Mingyingwangdian, dated to the second year of *Yanyou* 延祐 reign period (1315), is the main building of Shuishenmiao in the complex of Guangshengsi. It is also famous for the Yuan wall paintings in the hall. See Chai Zejun (2006, 68)

¹⁹⁹ The Main Hall of Erlangmiao is located at Pingyao in Shanxi.

²⁰⁰ The Main Hall of Longtianmiao is dated to the sixth year of *Yanyou* 延祐 reign period(1319) of the Yuan dynasty. It is located at Jexiu County in Shanxi. See Zhang Yuhuan(1979, 81).

²⁰¹ Guangjisi, a Buddhist monastery, is located at the county city of Wutai in Shanxi. Only its main hall was built in the Yuan dynasty.

Yingzao fashi and the Song architecture in Jiangnan, craftsmen in Jiangnan still insisted on the style of *mantangzhu* 滿堂柱 (full-column hall) in the Yuan buildings. *Jianzhuzao* and *yizhuzao* are merely used in Sichuan.

The earliest example of *jianzhuzao* can be found in a Song building in the north. For example, in Shengmudian 聖母殿 (the Sage Mother Hall) of the Jin Shrine the second row of columns was removed (see fig. 4.2c-1).²⁰² Early examples of *yizhuzao* can be found in many Jin buildings in the north, such as Mituodian 彌陀殿 (Amitaba Hall) of Chongfusi 崇福寺²⁰³ in Shuozhou (see fig.4.2b), and Wenshudian 文殊殿 (Manjusri Hall) in Foguangsi 佛光寺 at Wutaishan. Mituodian is also one of those Jin buildings that use *jianzhuzao* and *yizhuzao* at the same time. There is no doubt that *jianzhuzao* and *yizhuzao* are widely used in the north ever since the Song and Jin period.

It is not until the Yuan dynasty that *jianzhuzao* and *yizhuzao* were completely developed and widely used in north China. Typical examples of *jianzhuzao* and *yizhuzao* of the Yuan dynasty are the Main Hall of Lower Guanshengsi and Wenshudian 文殊殿 (Manjushri Hall) of Yanshansi 岩山寺.²⁰⁴ From Figure 4.2d we can see that, in the Main hall of Lower Guangshengsi, most interior columns are eliminated and a few interior

²⁰² Shengmudian is an elaborated timber building dated to 1102, the first year of Chongning reign period of the Northern Song. It is located at the Jin Shrines near Taiyuan, Shanxi province. See Tracy Miller (2007) and Chai Zejun, *Taiyuan Jinci Shengmudian xiushan gongcheng baogao*, 2000. In Figure 4.2c, the red spots on the plan of Shengmudian represents the columns that had been eliminated.

²⁰³ Mituodian in Chongfusi is dated to 1143, the Huangtong 皇統 reign period of the Jin dynasty. See Chai Zejun, *Shuozhou chongfusi*, 2000. In the plan of Mituodian in figure 4.2c-2, the red spots display the eliminated columns while the green spots represent the relocated columns.

²⁰⁴ See Chai Zejun, *Fanshi Yanshansi* 繁峙岩山寺, Wenwu chubanshe, Beijing 1990.

columns are displaced. In Wenshudian of Yanshansi, except for the four displaced columns, no interior columns are left. This suggests that in the Yuan dyansty, craftsmen in Shanxi had already commanded a very advanced technique of *jianzhuzao* and *yizhuzao*. Given the fact that the techniques of *jianzhuzao* and *yizhuzao* are also employed in many Yuan buildings in Sichuan²⁰⁵ (see fig. 3.1i,j &k), it is very likely that craftsmen in Sichuan learned them from the people in the north, and it is even possible that some of the craftsmen in Sichuan might have immigrated directly from the north to Sichuan during some pre-Yuan period.

(2). Bracket Sets

In terms of bracket sets, Yuan buildings in Sichuan are very distinctive from Yuan buildings in Jiangnan because of the employment of *xiegong* 斜栱 (oblique arm), *shipaigong* 實拍栱(immediate bracket), *yatiao* 壓跳 and *yixinggong* 翼形栱(wing-shaped arm), and the lack of *linggong* 令栱 and *shuatou* 耍頭.

It has been mentioned before that *xiegong* was invented in the Song dynasty and developed in the Jin dynasty.²⁰⁶ Song dynasty *xiegong* can be found in Monidian 摩尼殿 of Longxingsi 隆興寺, Hebei province (see fig. 4.2e-1). It became so prevalent in the Jin dynasty that we can find *xiegong* in many Jin buildings in the north, such as Mituodian of

²⁰⁵ See Chapter 3, section 1.

²⁰⁶ Monidian is dated to 1052.

Chongfusi in Shuozhou and Sanshengdian三聖殿 of Shanhuasi善化寺in Datong, Shanxi province (see fig. 4.2e-2&3). It is almost regarded as the symbol of Jin architecture.

Although *xiegong* in the Yuan period is not as popular as in the Jin dynasty, it is still carried on by the Yuan craftsmen in the north. Examples are Mingyingwangdian of Shuishenmiao at Guangshengsi and Guanwangmiao關王廟²⁰⁷ at Dingxiang county in Shanxi (see fig.4.2e-4&5). In Sichuan, *xiegong* is also an obvious feature (see fig.3.2l), which might suggest that Sichuan craftsmen of the Yuan period adopted the Jin style in the north. Another possibility is that by the end of Jin dynasty, some craftsmen in the north fled to Sichuan to escape from the invasion of the Mongol.²⁰⁸

In Sichuan, *litiao huagong*裡跳華拱, *huagong* that projects toward the inside, are usually processed as *shipaigong*實拍拱, a *huagong* that is immediately below another member without any bearing block in between, and *yatiao*壓跳, the inner part of a *huagong* that is as long as two projections and is made into a *tatou* 檣頭.²⁰⁹ Although *shipaigong* that functions as an interior *tiao* is not very often used in Yuan architecture in the north, *yatiao*, called *tatoufang* 檣頭方 by Zhang Yuhuan, are prevalent in Yuan buildings in the north.²¹⁰ In Mingyingwangdian of Shuishenmiao and

²⁰⁷ Guanwangmiao, the Temple of King Guan, is a small Yuan building of three bays wide. It is located at Dingxiang, a county not far from Wutaishan.

²⁰⁸ Immigration of the craftsmen in Sichuan during the Yuan dynasty will be discussed in the conclusion section of this chapter.

²⁰⁹ See Chapter 3, section 3 (3) and Figure 3.3m.

²¹⁰ See Zhang Yuhuan 1979, 99

Chuanfazhengzongdian 傳法正宗殿 of Yong'ansi 永安寺 ²¹¹, *yatiao* are installed on top of the *huagong* that projects toward the inside to support *sichuanfu* 四椽栿, the four-rafter beam (see fig.4.2f).

Yixinggong is another feature that differentiates Yuan buildings in Sichuan from those in Jiangnan. Four Yuan buildings in Sichuan are installed with *yixinggong* on their bracket sets (see fig.4.2g) and none has ever been found in Jiangnan. However, we can see a lot of *yixinggong* installed in the Yuan timber buildings in the north. Zhang Yuhuan suggests that this wing-shaped arm that usually crosses *huagong* both on interior and exterior tiers became popular in the Yuan dynasty, especially in southern Shanxi. ²¹² Examples of *yixinggong* can be found in the Niuwangmiao Theatrical Stage 牛王廟戲臺 ²¹³, the Main Hall of Lower Guanshengsi and Jiangzhoudatang 絳州大堂, the Municipal Hall of Jiang Prefecture (see fig.4.2g). This is another point that suggests Yuan building in Sichuan are more similar to those in the north than those in Jiangnan.

It is very unique that the bracket sets of several Yuan buildings in Sichuan do not have *linggong*, the innermost or outermost bracket in a bracket set parallel to a building elevation, and *shuatou*, the locust head. Figure 3.2e displays that only the Southern Song building, Feitianzangdian of Yunyansi, in Sichuan has *linggong* and *shuatou* installed.

²¹¹ Chuanfa zhengzongdian of Yong'ansi, located in Hunyuan 渾源 of northern Shanxi, is a large-scale Yuan building. Its facade is five bays wide and its side is three bays wide.

²¹² See Zhang Yuhuan 1979, 99

²¹³ Located in Linfen 臨汾, the theatric stage in the Temple of Niuwang, has been listed as a major site of historic value under Shanxi provincial protection.

When it came to the Yuan dynasty, both *linggong* and *shuatou* disappeared. This is also very unusual among the Song, Liao, Jin and Yuan architecture in the north. It can be considered a unique feature of Sichua architecture.

(3). Chuantongshi 傳統式 versus da'eshi 大額式

The article written by Zhang Yuhuan in 1979 is a very important contribution to the studies of Yuan timber architecture in the north because he categorizes Yuan timber buildings into two types based on the different applications of horizontal beams on their timber framework.²¹⁴ The first one is called *chuantongshi*, the conventional style, and the second one called *da'eshi*, the style of big column-top tie beam.

Chuantongshi, the conventional style, literally means that the style was inherited from the construction convention of the Song dynasty. In a Yuan building of the conventional style, it is the longitudinal beams, such as *sichuanfu* 四椽栿 (four-rafter beams), which are parallel to the side elevation of the building, that mainly bear the load of the roof structure, just like the tradition until Song, Liao and Jin periods. In this case, the longitudinal beams are usually the thickest horizontal members in the structure.

Da'eshi, the style of big column-top tie beam, on the other hand, is featured by its lateral column-top tie beams that run through the whole width of the building and is parallel to the facade of the building. This column-top tie beam lies either on the row of

²¹⁴ Zhang Yuhuan 1979, 72

eave columns or on the row of interior columns, or on both. Its function is to take the place of *fu* 袱, the longitudinal rafter beams, to support the main load of the roof structure. In this case, these column-top tie beams should be much thicker than the longitudinal beams in order to be able to take the burden.. Such column-top lateral beams are called *da'e* 大額.

Figure 4.2h displays the sectional views of Mingyingwangdian of Shuishenmiao representing the conventional style, and the Main Hall of Lower Guangshengsi that represents the style of big column-top tie beam. In Mingyingwangdian, no beams that intersect the columns are thicker than *liuchuanfu* 六椽袱 (six-rafter beam) and *sichuanfu* 四椽袱 (four-rafter beam), which makes these rafter beams the main load bearer of the building (fig.4.2h-1). In the Main Hall of Shengshousi 聖壽寺, on the other hand, a thick *da'e* is on top of the interior column (fig.4.2h-2). Obviously, this *da'e* is much thicker than the four-rafter beam, which enable the *da'e*, the main load bearer of the building. Another typical example of *da'eshi* is Huozhou datang 霍州大堂²¹⁵ (the Municipal Hall of Huo Prefecture, see fig.4.2h-2). It is featured by a huge column-top tie beam, a typical *da'e*, lying on top of the eave columns. This huge column-top tie beam became the most striking thing on the facade. In contrast to a building of conventional style where *pupaifang* 普拍方, a flat board, lies on top of eave columns and runs through the facade,

²¹⁵ The municipal hall of Huo prefecture in Huo County, Shanxi, is a well-preserved government mansion of its kind. Extant are the gateway, the inner gateway, the memorial archway the first hall and the second hall. The first hall is built in the Yuan dynasty. See *Shanxi gujianzhu tonglan*, p. 262

in a building of *da'eshi*, if the huge column-top tie beam is placed on the eave columns, it would replace *pupaifan* and weaken the importance of *lan'e* 闌額, the lintel that runs from column to column. In other more revolutionary cases, *lan'e* and *pupaifang* would just simply disappear, such as observed in the Theatrical Stage of Niuwangmiao (see fig.4.2h-4).

Based on the definition of *chuantongshi* and *da'eshi*, no Yuan timber buildings in Jiangnan has any lateral tie beams that surpass the longitudinal beams (see fig.3.3a). Therefore, they can be defined as buildings of conventional style. However, it is hard to say whether the Yuan buildings in Sichuan are conventional style or big column-top tie beam style. From the sectional views (see fig. 3.3b), each Yuan building in Sichuan has one or more lateral beams that are thicker than the longitudinal beams. Therefore, none of them can be defined as the conventional style. Nevertheless, it is also problematic to define the Yuan buildings in Sichuan as the big column-top tie beam style. In contrast to a typical *da'eshi* building in the north, such as the Municipal Hall at Huo Prefecture (see fig.4.2j-2), where a huge and monolithic *da'e* lies on top of the columns and runs through the whole elevation of the building, in the Sichuan Yuan buildings, the huge tie beam does not overhang the eave columns. Similar to a *lan'e*, the ends of the huge tie beam still penetrate into the shaft of the column and the tie beam is divided into several segments by the bays. Such a tie beam is not exactly a *da'e*. It is better described a *yan'e* or *lan'e*

that are extraordinary thick. Accordingly, the timber structure of the Yuan buildings in Sichuan is something between the conventional style and the big column-top tie beam style, which is very significant because these Yuan timber structures in Sichuan actually reflect the transformation stage from the conventional style to the big column-top tie beam style, which is not usually seen in the north.

Except for the configuration of the horizontal beams, there are other features related in the type of big column-top tie beam. According to Zhang Yuhuan, the invention of *da'eshi* is related to the development of *jianzhuzao* and *yizhuzao*.²¹⁶ The elimination and displacement of columns caused by *jianzhuzao* and *yizhuzao* necessitated the lateral tie beams to be thicker and stronger in order to compensate the loss of load support. Therefore, it is not difficult to understand that another feature that usually accompanied the big column-top tie beam style is the employment of *jianzhuzao* and *yizhuzao*. Moreover, among the Yuan buildings in the north, *da'eshi* is also accompanied with *yixinggong* 翼形拱, the wing-shaped arm, and *chuomufang* 綽幕方, short subordinate beam.²¹⁷ *Chuomufang* is usually used to compensate the *lan'e* that would occasionally disappear in the presence of the huge tie beam. Although the Yuan buildings in Sichuan are not exactly like those *da'eshi* buildings in the north, they also share these additional features of *da'eshi*, which clearly suggests the connection of the Sichuan buildings and the

²¹⁶ Zhang Yuhuan 1979, 72

²¹⁷ *Chuomufang* is used in many Sichuan Yuan buildings, such as Feilaidian, the Main Hall of Yong'ansi, the Main Hall of Lifengguan and etc.

techniques of *da'eshi* in the north.

In terms of Yuan buildings of conventional style, Zhang Yuhuan also divided them in the north into four sub-types based on the configuration of the longitudinal main beams. Type I is called *sanchuanfu dui z haqian y ong s anzhu* 三椽栿對筭牽用三柱 (see fig.4.2j-1), which means the building is mainly spanned by a three-rafter beam and a one-rafter beam with three columns (two eave columns and one interior column). Type II is known as *sichuanfu dui rufu yong sanzhu* 四椽栿對乳栿用三柱 (see fig.4.2j-2), which means the building is crossed by one four-rafter beam and one two-rafter beam with three columns (two eave columns and one interior column). Type III, called *sichuanfu tongguanshi* 四椽栿通貫式, has a master four-rafter beam spanning the whole section of the building and no interior column is installed (see fig. 4.2j-3). Type IV is called *wuchuanfu dui zhaqian yong sanzhu* 五椽栿對筭牽用三柱, which states that the building is crossed by a five-rafter beam and a one-rafter beam with three columns (see fig. 4.2j-4). Although all the Yuan buildings in Jiangnan are defined as the conventional style, none of these configurations can be found in any Jiangnan Yuan buildings. Except for Ershanmen of Yunyansi, all the Jiangnan Yuan timber buildings have three longitudinal beams across the building with two interior columns and eave columns (see fig.3.3a). Among those structural types, none of them use three longitudinal beams with four columns.

Along the same way, Zhang Yuhuan also further divides the buildings of the big

column-top tie beam style into five types²¹⁸: Type I, called *sichuanfu guantong yong erzhu* 四椽栱貫通用二柱 (see fig. 4.2k-1) has a master four-rafter beam spanning the whole section of the building with two eave columns. Type II is called *sanchuanfu dui zhaqian yong sanzhu* 三椽栱對筈牽用三柱 (see fig.4.2k-2), which means the building is mainly spanned by a three-rafter beam and a one-rafter beam with three columns (two eave columns and one interior column). Type III is called *sichuanfu qianhou dui zhaqian yong sizhu* 四椽栱前後對筈牽用四柱 (see fig.4.2k-3), which means the building is crossed by one four-rafter beam and two one-rafter beams (on each side of the four-rafter beam) with four columns (among which two are interior columns). Type IV is known as *sichuanfu dui rufu yong sanzhu* 四椽栱對乳栱用三柱 (see fig.4.2k-4), which means the building is crossed by one four-rafter beam and one two-rafter beam with three columns (two eave columns and one interior column). Type V is called *liuchuanfu dui rufu yong sanzhu* 六椽栱對乳栱用三柱, which suggests the building is crossed by a six-rafter beam and a two-rafter beam with three columns (see fig. 4.2k-5). If we consider the Yuan buildings in Sichuan as *da'eshi*, the roof structures of Yong'anmiao and Pantuoshidian follow Type II and the structure of Wenchangdian of Wulongmiao follows Type III. Regarding the other buildings in Sichuan, there are still many varieties of the roof structure among other buildings in Sichuan that are completely different from those types in the north.

²¹⁸ Zhang Yuhuan 1979, 80-85

The details of the timber structure in the northern Yuan buildings are not as delicate as those dated to the Song and Jin dynasties. The joints of the timber frame are unadorned. For example, in the Main Hall of Guangjisi (see fig.4.21-1) and the Main Hall of Shoushengsi²¹⁹ (see fig.4.21-2), horizontal beams are directly connected to vertical posts and columns without any bracket sets and camel humps applied on the joints of the timber members. Except for these simplified joints, Yuan buildings are also featured by the usage of raw logs. A typical example is the Main Hall of Longtianmiao (see fig.4.21-3). From the sectional view of the building, the three-rafter beam that spans from the eave column to the interior column is made of a curved log that is not artificially processed. It is quite different from the usage of *yueliang*, a beam that is intentionally made into a decorative crescent shape. *Yueliang* is described in the *Yingzao fashi* and used in many Song and Yuan buildings in Jiangnan.

It has been mentioned in the previous chapter that *yueliang* is not used in Sichuan.²²⁰ The horizontal beams in Sichuan are merely unshaped raw logs without much decorative profile, which is quite similar to the situation in Shanxi. Moreover, in the Yuan buildings of Sichuan, the joints that connect the horizontal beams with the vertical posts and columns are quite simplified (see fig.3.3b). Fewer bracket sets and camel humps are used. In the Yuan buildings of Jiangnan, on the other hand, the joints

²¹⁹ Shoushengsi is located in Yushe 榆社 county. The main hall was first built in Yuan and reconstructed in Ming. Zhang Yuhuan believes that many Yuan features still remain in this building. See Zhang Yuhuan 1979, 80

²²⁰ See Chapter 3, section 3 (4)

between the horizontal beams and vertical posts are still composed of bracket sets, especially with *dingtougong*, a half *huagong* with its tenon at the rear mortised into a column, which is used to support the horizontal beams that are mortised into the shaft of the columns.

(4). Conclusions

In summary, Yuan buildings in Sichuan are much more similar to the Yuan buildings in the north than to the Yuan buildings in Jiangnan. Table 11 indicates ten important features that differentiate the Yuan buildings in Sichuan from those in Jiangnan. Among these ten factors, Yuan buildings in the north share eight features with those in Sichuan and only two features with those in Jiangnan. *Jianzhuzao* and *yizhuzao* are applied both in Sichuan and in the north, but not in Jiangnan. Three features of bracket sets, *xiegong*, *yatiao* and *yixinggong* are also found both in Sichuan and in the north but not in Jiangnan. Moreover, a very special style of timber framework, *da'eshi*, is still not found in Jiangnan. The only two similarities between Jiangnan and the north are the employment of *linggong* and *shuatou*, and the conventional style of framework. Nevertheless, these two factors merely represent the tradition that was inherited from the orthodoxy of the *Yingzao fashi* written in the Song dynasty. It is sort of obvious that the Yuan buildings in Jiangnan have not been changed or influenced by the renovations that

took place during the Song-Yuan transformation in the north. Yuan buildings in Jiangnan meet the statement made by Pan Guxi that "southern Yuan buildings" merely followed the Song architecture that was the originally in the south.²²¹

Although Sichuan is still considered part of south China, the architecture dated to the Yuan dynasty in Sichuan developed otherwise. From Table 11 we see that the features that Sichuan Yuan buildings share with those in the north, such as *yizhuzao*, *jianzhuzao*, *xiegong* and *da'eshi*, are basically generated from the Jin dynasty and developed in the Yuan dynasty. It is possible that the Yuan buildings in Sichuan were directly influenced by the Jin architecture in the north.

The fact that the Yuan buildings in Jiangnan are so independent from the Yuan buildings in the north and are still able to follow the orthodoxy of the *Yingzao fashi* is in part because of the Mongols' less destructive conquest of Jiangnan. Despite its commercial prosperity on the surface, the court of Southern Song had already confronted serious internal political and economic difficulties by their confrontation with the Mongols. After Chancellor Jia Sidao 賈似道 was banished by his political enemies in the court, the Mongols occupied one town after another in southeastern China without confronting any severe resistance. In many cases, the Sung military and inhabitants simply surrendered. The Song court had no choice other than capitulation. In late January 1276, the empress dowager who acted as regent for the emperor gave up the dynasty's

²²¹ Pan Guxi 2001, 428

seal to the Mongols. Song's surrender was graciously accepted by the Mongols and the royal family was escorted to the north. Although the conquest of the Song was still not completed by then, since the Song loyalists who had fled further south were lacking unity and were constantly wrangling, they were easily crushed by the Mongols by 1279. Not only was the conquest less destructive because of the easy concession of the Southern Song court, Khubilai also realized that in order to gain the allegiance of the Chinese, he could not appear to be merely a "barbarian". Rather than exploiting the resources of the southeast China, as the Mongols had done in north China, Khubilai chose to keep continuity in some policies and personnel that would smooth the transition to Mongolian rule.²²² Considering the history of Mongols' conquest of the Southern Song, it is not surprising to see that so many Song traditions were kept in the Yuan buildings and the orthodoxy of the *Yingzao fashi* was still carried out by the Yuan craftsmen in Jiangnan. It is also because of the peaceful resolution for the hostilities between the Chinese and the Mongol rulers that the economic prosperity in Jiangnan was not severely deconstructed. This is why the Yuan buildings in Jiangnan were still finely built and carefully decorated with sufficient financial aid.

This situation in Sichuan is drastically different from that in Jiangnan during the Song-Yuan transition. In Paul Smith's article regarding Sichuan refugees of the

²²² For a concise review of the fall of the Southern Song in 1276, see Rossabi 1994, 429-36

Song-Yuan transition, he describes the course of Mongol's deconstruction of Sichuan.²²³

He suggests that no region in China was more thoroughly devastated by pre-modern warfare than Sichuan during the Mongol invasions. Mongol invasions from 1231 to 1280 reduced the self-contained Sichuan Basin that had been occupying the cultural and economic forefront of the empire for over a millennium to a backwater frontier. Before 1260, before Khubilai had become Khaghan and before Chinese or Sinicized advisors were present in the court, the Mongols employed wholesale civilian massacre as a tactic of intimidation and control in Sichuan. This contrasts the peaceful solution that Khubilai later employed in Jiangnan. In the course of half a century roughly two million families were slaughtered or forced to flee, and the region's population as of 1223 was reduced by over 95 percent in 1282.

Given the severe damage in Sichuan caused by the Mongol invasion, it is understandable that the Yuan buildings in Sichuan are less delicate than the buildings in Jiangnan. In some Yuan buildings, bracket sets are only installed on the front facade. The other sides are left simple and plain (see fig.4.2m). From the bracket sets on the facades in Sichuan, we can still appreciate the advanced carpentry technique, but from the bracket sets on the sides, it is easy to perceive budget troubles from the simple and crude construction. In Jiangnan, however, there is almost no difference between the bracket sets on the facade and the bracket sets on the side. Moreover, the simplification of framework

²²³ Paul J. Smith 1992, 668-72

joints in the roof structure is also an evidence of the financial crisis (see fig. 3.3b).

In addition, the migration history of Sichuan helps explain the similarities between the Yuan buildings in Sichuan and the Yuan and Jin buildings in the north. Generally speaking, there are three waves of southward migration in the pre-modern history of China. The first great wave of southward migration that occurred in the fourth century was called Yongjia nandu 永嘉南渡 by Chinese historians. This southward migration is associated with Yongjia zhiluan 永嘉之亂, the Disorders of the Yongjia period, an upheaval between the Western Jin and Eastern Jin.²²⁴ The second major wave of migration to affect the area south to the Yangtze river began with the An Lushan Rebellion (755-763).²²⁵ The third wave of southward migration was caused by Jinggang zhiluan 靖康之亂, the Disorders of the Jinggang period. In 1126 the Nüzhen (Jurchen) 女真 people, founders of the Jin Dynasty, launched a full-scale invasion of northern Song. Within the year, the Northern Song capital, Kaifeng 開封, fell and the Northern Song collapsed. Emperors Qinzong 欽宗 and Huizong 徽宗 were captured by the Nüzhen. This event gave rise to successive southward migrations into the Chinese-held parts of central and south China until the fall of the Southern Dynasty to the Mongols in 1279.²²⁶

The third wave of migration after the Jinggang period can be divided into seven

²²⁴ Ge Jianxiong 1993, 148

²²⁵ Ibid., 244

²²⁶ Ibid., 283-9

phases.²²⁷ The first four phases, from 1126 to 1224, are related to the wars between Jin and Southern Song. The fifth phase of migration to the south was caused by the conquest of Jin by Mongols during 1231 and 1234. The last two phases were related to the Mongol conquest of Southern Song, from 1235 to 1277. It is remarkable that Sichuan was one of those popular destinations for the refugees from the north. The number of immigrants and refugees that Sichuan had accepted ranks only second to the number of Jiangnan.²²⁸ Moreover, most immigrants in Sichuan were original from the northwest of China, including the present Shaanxi and Gansu provinces.²²⁹

The similarities between the Yuan architecture in Sichuan and in north China are likely to be relevant to these pre-Yuan migrations. It is interesting that although there were also a large number of immigrants in Jiangnan, the architectural style did not reflect such influence. It is probably because the *Yingzao fashi* was reprinted in Suzhou in the fifteenth year of the Shaoxing 紹興 period (1145) of the Southern Song to reinforce the orthodox style of the Song dynasty. The influence of the reprint of *Yingzao fashi* might not have been enough to affect the architecture in Sichuan. Instead of being influenced by the *Yingzao fashi*, architecture in Sichuan of the Yuan dynasty is more similar to the Yuan architecture in the north. Moreover, the distinctive features of *jianzhuzao*, *yizhuzao*, *xiegong* and *da'eshi* were generated among the Jin buildings in the north. Jingkan

²²⁷ For a general study of the migration history after Jingkan period, see Wu Songdi 1992, 11-36

²²⁸ Wu Songdi 1993, 89

²²⁹ Ibid., 89

zhiluan, the Disorders of the Jinggang period, is not only a symbol of the fall of the Northern Song dynasty. It also marks the rise of the Nüzhen people and the Jin dynasty. Therefore, the refugees from the north who fled to Sichuan intermittently after Jinggang zhichi 靖康之亂 were actually from the territory of the Jin dynasty. It is very reasonable that they brought the architecture styles and techniques that were generated in the north under the Jin rulers.

CONCLUSION

The history of Chinese architecture is usually discussed by dynasties. Dynastic style sometimes exists in a longstanding dynasty, ruled by a government that is culturally powerful, such as the Tang, Song, Ming and Qing dynasties. In terms of the Yuan dynasty, ruled by the Mongols whose culture is not as powerful as their military force, architecture became diverse caused due to the social transformation from the Northern Song to Yuan. This dissertation, although in some ways a dynastic history of Yuan architecture, mainly explores the differentiation of architectural styles in different regions.

This study began with an examination of individual Yuan buildings, especially timber buildings, in Jiangnan and Sichuan. Through specific investigation of each building, we find that the Yuan buildings in Jiangnan are featured by the traditional roof structures of *tingtang*-style in accordance with the *Yingzao fashi*, the continuity with the Song buildings, and the meticulous design of each architectural member. Although there are only five Yuan timber buildings that are hitherto discovered in Jiangnan, their integrity is sufficient to unfold a regional style. Yuan buildings in Jiangnan followed the regional tradition ever since the Northern Song dynasty that is represented in the Main Hall of Baoguoosi and influences the *Yingzao fashi*. The popularity of the official Song style in Jiangnan was also reinforced during the Southern Song dynasty due to the reprint of the *Yingzao fashi* in Suzhou.

It is surprising to have discovered nine timber buildings in Sichuan that are in all likelihood dated to Yuan. A thorough investigation of these buildings calls attention to the diversity and innovation of Yuan architecture in Sichuan: new members such as crescent eave lintels, oblique arms, and wing-shaped arms that were not recorded by the *Yingzao fashi* were added; audacious columniations such as *jianzhuzao* were employed; a contradiction between advanced artistry and financial shortage are reflected by the increase of decorative members, such as the wing-shaped and oblique arms, and the reduction of bracket sets on the sides other than the façade. Yuan architecture in Sichuan is featured by several regional features that are very unique and also by a lack of internal integrity in construction and style.

Through a comparison between Jiangnan and Sichuan, we find that there are some similarities between these two areas, such as the increase of intercolumnar bracket sets and the trend of *chonggong* replacing *dangong*. These common features have already been considered as a general trend of the transformation from Song-Yuan period to Ming-Qing period.²³⁰ On the other hand, many differences between Jiangnan and Sichuan explicitly suggest the existence of two independent regional styles.

Most important features of the Yuan buildings in Sichuan can be traced back to the northern provinces such as Shanxi, Shaanxi and Hebei. Oblique arms, wing-shaped arms,

²³⁰ In Chen Mingda's incomplete article, "Zhongguo gudai mujiegou jianzhu jishu: Nansong-Ming, Qing", he summarized that the increase of intercolumnar set and the replacement of *dangong* by *chonggong* were developed by the end of Yuan dynasty. See Chen Mingda 1998, 222.

audacious columniation of *yizhuzao* and *jianzhuzao* and the thick huge big column-top tie beam, all found in Jin architecture in the north, reveal the intimate relationship between Yuan architecture in Sichuan and Jin architecture in the north. According to the immigration history of Sichuan, it is very likely that craftsmen in the north continuously fled from the Jin territory to the Southern Song territory in Sichuan ever since the Disorders of the Jingkang. Therefore, Yuan architecture in Sichuan can be described as a branch developed on the basis of Jin architecture in the north.

Yuan architecture in Jiangnan, on the other hand, is almost irrelevant to Jin or Yuan architecture in the north. Buildings still inherited the local tradition that had begun since the Northern Song dynasty or even earlier. This local tradition in Jiangnan, represented by the Main Hall of Baoguosi, is archaistic in many ways, and such archaism later became a local style of Jiangnan. For example, the pervasion of crescent beam, *yueliang*, and the resistance against the new styles of *jianzhuzao* or *yizhuzao*, follow the *Yingzao fashi* (but are ignored by the craftsmen in the north) and can be traced back to the Tang dynasty.²³¹ Yuan architecture in Jiangnan also follows the archaism. However, by that time, the archaism had become regionalism, because it had been abandoned by other places for a long time.

Through the discussion above, we can understand that in terms of architecture,

²³¹ In Tang architecture, such as the East Hall of Foguangsi, crescent beams are still used, but they start to fade away after the Five dynasties. *Jianzhuzao* and *yizhuzao* were invented afterward and were never accepted by Jiangnan.

Yuan dynasty is undoubtedly a transitional period: old traditions generated under different post-Yuan regimes, such as Song and Jin, developed separately under the rule of Mongols, while new trends were in the incubation anticipating a new era. In the north, post-Song buildings, following *chuantongshi* (the conventional style categorized by Zhang Yuhuan), and post-Jin buildings, following *da'eshi* (the big column-top tie beam defined by Zhang Yuhuan) coexisted in the same region; in the south, on the other hand, the Yuan buildings follow the Jin style in Sichuan and the archaistic post-Song style in Jiangnan. The regional disparity in the north and in the south are due to the transformation of the political situation that was also caused by migration waves and the imbalanced development of economy.

Since no imperial timber architecture has survived today at the Yuan capital Dadu, how Yuan official style buildings were constructed remains unknown. Moreover, there was not a standard architecture manual book such as the *Yingzao fashi* in the Yuan. How the official architectural style transformed from Song, represented by the *Yingzao fashi*, to Ming, represented by the surviving Ming buildings in Beijing that were constructed by the Ming emperors is addressed in this thesis.

In terms of official style of architecture, Yuan's successor Ming is similar to Yuan's predecessor Song in some way: they both developed a standard system of architecture design and construction and their dynastic official styles are both so powerful that they

profoundly influenced the later dynasties. Guo Huayu, a young Chinese architectural historian, suggests that the Ming rulers tried very hard to revive the Han-Chinese culture by imitating Tang and Song tradition in order to weed out the influences left by the Mongols. Regarding architecture, Ming people adopted technology and regulations from the *Yingzao fashi*.²³² Her perspective on Ming official style is correct. Moreover, Ming official style is actually an elective style, shown by its absorption of various regional styles of the Yuan dynasty. For example, Ming official style still use the conventional hypostyle columniation instead of the innovative columniation--*jianzhuzao* and *yizhuzao*. Ming resist diagonal arms that are not recorded in the *Yingzao fashi* and merely use orthogonal bracket arms instead. These two Song traditions are not only in the *Yingzao fashi* but also maintained in the Yuan buildings in Jiangnan.

On one hand, Ming official style revived the orderly design and construction provided by the *Yingzao fashi*; on the other hand, there are still some places in the Ming official style that contradict the Song official style, such as the degeneration of bracket sets, the disappearance of crescent-moon beams, and the thickening of *lan'e*. These new features of the Ming official style compared to the Song had already existed in the Yuan buildings in Sichuan area and in the northern provinces. In fact, the major differences between the Song and Ming official styles are the differences among different regional styles during the Yuan dynasty.

²³² Guo Huayu 2005, 4

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GLOSSARY OF CHINESE ARCHITECTURE²³³

<i>Pinyin</i>	Chinese Characters	Translation	Note
<i>ang</i>	昂	inclined cantilever	available in two types: <i>xia'ang</i> and <i>shang'ang</i> ; always referring to <i>xia'ang</i> in this thesis
<i>angjian(angzui)</i>	昂尖(昂嘴)	beak of <i>ang</i>	the front part of a <i>xia'ang</i> between the tip and the outermost block
<i>angting tiaowo</i>	昂程挑幹	cantilever <i>ang</i> -beam	a <i>xia'ang</i> which does not project at the front; used to carry a <i>xiapingtuan</i> purlin
<i>angwei tiaowo (tiaogan)</i>	昂尾挑幹 (挑桿)	slanting cantilever	the inner end of a <i>xia'ang</i> inclining upwards to carry a <i>xiapingtuan</i> purlin; also known as <i>tiaogan</i> in Qing architecture
<i>bajia chuanwu</i>	八架椽屋	eight-rafter building	a building with a transverse span of eight rafters
<i>ban</i>	瓣	segment	a segment of a curved profile
<i>baogushi</i>	抱鼓石	drum-shaped stone	used in Qing architecture
<i>baozhuang lianhua</i>	寶裝蓮華	decorated lotus petal	usually applied on column base mouldings
<i>bian'e</i>	匾額	signboard	an inscribed tablet which is often decorated*
<i>bofengtuan</i>	搏風樑	eave purlin	the lowest purlin of a roof frame, laid horizontally on the outermost brackets of a <i>puzuo</i> to support the eave rafters*
<i>bujian puzuo</i>	補間鋪作	intercolumnar bracket set	
<i>cai</i>	材	a modular unit	

²³³ This glossary include only Chinese traditional architecture terms mentioned in this thesis. Most of the terms are from the *Yingzao fashi* of the Song dynasty. Terms of the Ming-Qing period are noted.

<i>cai-fen zhi</i>	材份制	<i>cai-fen</i> system	modular	standard units of measurements used in Song carpentry: 1 <i>cai</i> = 15 <i>fen</i> ; there are eight grades of <i>cai</i> used according to scales and types of buildings
<i>cao</i>	槽	1. a structural frame composed of a row of columns 2. the central line of a <i>cao</i> 3. the space defined by adjacent <i>cao</i>		
<i>caojia</i>	草架	rough frame	structural	a roof structure above ceiling level without artistic surface treatment*
<i>cejiao</i>	側腳	outward incline		a column with a top leaning slightly inward and bottom outward
<i>chandu chuomu</i>	蟬肚綽幕	cicada's beam	abdomen	a beam with an underside shaped with a succession of rings like a cicada's abdomen*
<i>chanlongzhu</i>	纏龍柱	dragon column		a column entwined by a sculptured dragon*
<i>chanzhuzao</i>	纏柱造	would-column built		a construction method used to construct multi-story buildings, whereby each column of the upper story is set on a beam and is wound round by three capital blocks at each corner
<i>chashou</i>	叉手	forking-hand		slanting struts used to support and stabilize the ridge purlin
<i>chazhuzao</i>	叉柱造	forking-column built		a construction method for multi-storey buildings, whereby each column of the upper storey stands on the capital block of the lower storey
<i>chengchuanfang</i>	承椽方	rafter bearer		a square purlin to support eave rafters

<i>cheshang mingzao</i>	徹上明造	open roof	a roof frame without a ceiling in which beams, struts, purlins and rafters are exposed from below; all members are smoothly planed and often artistically treated*
<i>chi</i>	尺		a unit of length; in the Song dynasty, one <i>chi</i> varied between 31.6 and 32.9 cm (Yuan <i>chi</i> is the same as Song <i>chi</i>) ²³⁴
<i>chonggong</i>	重栱	double bracket	a double-tier bracket set, parallel to the elevation of a building and composed of a <i>mangong</i> placed above a <i>guazigong</i>
<i>chonggongzao</i>	重栱造	double-bracket structure	a bracket set which has <i>chonggong</i> at each projecting step
<i>chuan</i>	椽	rafter	
<i>chuandou</i>	穿門	post-and-tie construction	a type of building structure with purlins resting directly on columns, and with tie beams tying the columns together in the transverse direction
<i>chuban</i>	出瓣	outward petal	a convex segment of a profile
<i>chuomufang</i>	綽幕方	short subordinate beam	a short beam immediately under and parallel to a <i>lan'e</i> or <i>yan'e</i> to provide an extra support and lessen the clear span between columns
<i>cijian</i>	次間	side bay	a bay next to the central bay
<i>congjiaochuan (yijiaochuan)</i>	從角椽 (翼角椽)	corner rafter	any radial rafters arranged in the form of an open fan on each corner of a hip roof

²³⁴ Wu Chengluo 1984, 242

<i>da'e</i>	大額	big column-top tie	lateral column-top tie beams, which is parallel to the facade of the building, and support the main load of the roof structure; they have to be considerably thicker than the longitudinal rafter beams, <i>fu</i> 枋.
<i>da'ezao</i>	大額造	style of big column-top tie	a style that is featured by <i>da'e</i>
<i>damuzuo</i>	大木作	structural carpentry	a type of building work regarding cutting, shaping and joining structural members, and framing buildings
<i>dangong</i>	單栱	single bracket	a single bracket arm that is parallel to the elevation of a building
<i>dangongzao</i>	單栱造	single-bracket structure	a bracket set having only a single bracket that is parallel to the elevation of the building at each projecting step
<i>dangxinjian (mingjian)</i>	當心間（明間）	central bay	a bay along the central axis of a building plane usually wider than the others; also known as <i>mingjian</i> in Qing architecture
<i>dianban</i>	墊板	filler board	a Qing term; a board used vertically to fill between a purlin and a tie beam or between beams
<i>diantang</i>	殿堂	monumental-scaled building	a type of timber structure in Song architecture; it consist of uni-height columniation, a bracketing unit and a roof frame, one placed upon another and arranged in a certain pattern of <i>cai</i> (see the entry of <i>cao</i>)
<i>diange</i>	殿閣		a multi-storey building of the <i>diantang</i> type*

<i>diesezuo</i>	疊澀坐	corbel podium	a masonry platform consisting of three parts—its upper and lower parts project successively farther from the middle part towards the top and bottom respectively*
<i>dingfu</i>	丁楸	T beam	A longitudinal beam which spans between gable and interior columns; it intersects a transverse beam forming a T-shaped plan; used to support the gable structure of a gable-on-hip roof or a hip roof*
<i>dinghua mohaigong</i>	丁華抹頰栱		a bracket below a ridge purlin, supported by a big block on a <i>shuzhu</i> ; diagonally cut to hold a <i>chashou</i> at each end*
<i>dingtougong</i>	丁頭栱	T-bracket	a half <i>huagong</i> with its tenon at the rear mortised into a column
<i>dou</i>	斗	bearing block	in a bracket set, a block with an opening in either one way or both ways to receive brackets above
<i>dougong</i>	斗栱	bracket set	term used in Qing architecture
<i>doukoutiao</i>	斗口跳	block-mouth tier	the connection between a column and a beam wherein the projecting end of the beam is made as a half <i>huagong</i> received by a <i>ludou</i> on top of the column
<i>ejiaodou</i>	訛角鬥		a <i>ludou</i> with its angles rounded off
<i>er(dou'er)</i>	耳 (斗耳)	ear (of <i>dou</i>)	the upper part of a <i>dou</i> with an opening cut either one way or both ways to receive brackets above
<i>fang</i>	方	lintel	a horizontal structural member under and parallel to purlins

<i>feizi</i>	飛子	flying rafter	an additional rafter (usually square in section) that is superimposed on an eaves-rafter (circular in section) and projected outwards
<i>fen</i>	份		a subsidiary modular unit; 1 <i>fen</i> =15 <i>cai</i>
<i>fu</i>	枋	transverse beam	a beam laid perpendicular to the longitudinal side of a building
<i>fubigong</i>	扶壁栱	buttress bracket	the longitudinal frame of a bracket set directly above a row of columns which is composed of lintels, brackets and blocks, varying in configurations
<i>fulian(pudi lianhua)</i>	覆蓮 (鋪地蓮華)	upset lotus	a carving of downward lotus-petals
<i>fupen</i>	覆盆	over-turned bowl	an ovolo moulding, the upper part of a stone column base shaped as an over-turned bowl, sometimes enriched with <i>fulian</i> or other decorative patterns
<i>gong</i>	栱	(bow-shaped) bracket arm	
<i>guazigong</i>	瓜子栱	short bracket	the shortest bracket in a bracket set, parallel to the elevation of a building; in a <i>chonggongzao</i> , it is usually with a <i>mangong</i> placed above
<i>huagong</i>	華栱	projecting bracket	a bracket placed at a right angle to the elevation of a building
<i>huatouzi</i>	華頭子		a variety of <i>huagong</i> with a two-scroll profile projecting from a <i>dou</i> to support a <i>xia'ang</i>

<i>jia'ang</i>	假昂	pseudo- <i>ang</i>	in Qing architecture; a <i>huagong</i> which looks like a <i>xia'ang</i>
<i>jian</i>	間	bay	a basic spatial unit defined by four columns
<i>jianzhuzao</i>	減柱造	eliminated-column style	a style used in a <i>tingtang</i> -type building by comprising two or three different structural frames so that the columns are placed without strict symmetry, and some columns are eliminated
<i>jiao'ang</i>	角昂	corner- <i>ang</i>	an <i>ang</i> in a corner bracket set placed at a 45-degree-angle to the building plan
<i>jiaogong</i> (<i>jiaohuagong</i>)	角栱 (角華栱)	corner bracket	a <i>huagong</i> in a corner bracket set placed at a 45-degree-angle to the building plan
<i>jiaohudou</i>	交互料	cross block	a block in a bracket set placed on top of a <i>huagong</i> or an <i>ang</i>
<i>jiaoludou</i>	角櫨料	corner <i>ludou</i>	<i>ludou</i> positioned in a corner bracket set
<i>jiaozhu</i>	角柱	corner column	a column which is placed at the corner of a timber structure
<i>jinjian</i>	盡間	end bay	the corner bay of a building
<i>jinzhu</i>	金柱	interior column	Qing term.
<i>jitian</i>	脊椽	ridge purlin	the purlin on top of a roof frame
<i>jixinzao</i>	計心造	crisscross projection	the use of either a <i>chonggong</i> or a <i>dangong</i> added above a <i>huagong</i> in a bracket set
<i>juanpengding</i>	卷棚頂	humpbacked roof	the roof frame consists of two parallel ridges spanned by curved rafters
<i>juansha</i>	卷殺	entasis	an artistic treatment of rounding off the ends of a bracket, beam or tapered column to create an elliptic or convex profile*

<i>juetou(shuatou)</i>	爵頭(耍頭)	locust head	overhanging bracket-end; the topmost member parallel to and above <i>huagong</i> and <i>ang</i>
<i>jugao</i>	舉高	raising roof	the way to determine the height of the ridge
<i>juzhe</i>	舉折	folding roof	a method of determining the roof curve
<i>lan'e (da'efang)</i>	闌額(大額枋)	column-top-tie	a major beam which spans between eave columns; it is as wide as the façade of the building and its ends do not project beyond the eave columns(see <i>yan'e</i>).
<i>liangchuanfu</i>	兩椽栿	two-rafter beam	a beam which has a span of two rafters
<i>lianzhudou</i>	連珠斗	piled blocks	two blocks piled to sit on a <i>huagong</i> to support a <i>shang'ang</i> above
<i>liaoyanfang</i>	撩簷方	square eave purlin	an eave purlin square in section
<i>linggong</i>	令栱		the innermost or outermost bracket in a bracket set parallel to a building elevation
<i>litiao</i>	裏跳	inner projection	the part of a bracket set that projects from the center line of columns towards the interior
<i>liuchuanfu</i>	六椽栿	six-rafter beam	a beam which has a span of six rafters
<i>liujia chuanwu</i>	六架椽屋	six-rafter building	a building with a transverse span of six rafters
<i>ludou</i>	櫨斗	capital block	a big block in the shape of a column capital to support a bracket set above
<i>luohanfang</i>	羅漢方	side bracket set tie	a long lintel used to brace top projecting brackets in a bracket set*
<i>mangong</i>	慢栱	long bracket	a bracket used in the <i>chonggongzao</i> , placed above a short bracket

<i>mantangzhu</i>	滿堂柱	full-column style		a style used in a <i>tingtang</i> -type building by placing columns on each crossing of the axes of colonnade
<i>mingfu</i>	明楸	exposed beam		a main beam that is visible inside a, artistically finished and usually in a slightly arched shape
<i>nidaogong</i>	泥道拱			a short bracket arm parallel to the elevation of the building on a <i>ludou</i> and cross fixed with a <i>huagong</i>
<i>niujituan</i>	牛脊樑	buffalo-spine purlin		a purlin placed directly above the center line of the row of eave column
<i>panjian</i>	襻間	straining tie		a purlin tie allocated for every other bay to hold a purlin; usually each end is trimmed as a half-bracket*
<i>pengjie linggong</i>	捧節令拱	holding <i>linggong</i>	joint	a <i>linggong</i> accompanied by a <i>timu</i> used under the joint of two purlins to hold them up
<i>ping</i>	平	flat		the middle part of a <i>dou</i>
<i>ping'an</i>	平闇	plain lattice ceiling		a ceiling composed of a small, square, grid framework covered by thin plates, neither painted nor decorated
<i>pingliang</i>	平梁	top beam		the uppermost beam of a roof frame, two rafters in length, which supports a <i>shuzhu</i> on its center to hold a <i>jituan</i> above
<i>pingqi</i>	平棊	decorated ceiling	lattice	<i>pingqi</i> whose square grid is much larger than those of <i>ping'an</i>
<i>pingqifang</i>	平棊方	ceiling joist		one of a pair of beams to support a ceiling above
<i>pingzhu</i>	平柱	central-bay column		the columns which define the central bay of a building
<i>pizhu'ang</i>	批竹昂	flat-beak <i>ang</i>		an <i>ang</i> with a beveled head*

<i>pupaifang</i>	普拍方	architrave	a flat beam that rests directly on a <i>lan'e</i> or a <i>yan'e</i>
<i>puzuo</i>	鋪作	bracket set	a Song term
<i>qi</i>	欹	apophyge	the lower inclined part of a block
<i>qiaban tuofeng</i>	招瓣駝峰		a <i>tuofeng</i> of which two shoulders are moulded into two or three foils*
<i>qinmian'ang</i>	琴面昂	convex-beak <i>ang</i>	the beak of a <i>xia'ang</i> with a slightly convex surface*
<i>qixindou</i>	齊心斗	central block	a block placed at the center of a bracket
<i>rufu</i>	乳栿	two-rafter eaves-beam	a two-rafter beam with its outer end laid on the bracket set of an eave column and its inner end on the set of an interior column or tenoned into the column
<i>sanchuanfu</i>	三椽栿	three-rafter beam	a beam which has a span of three rafters
<i>sandou</i>	散斗	end block	a <i>dou</i> placed on each end of a bracket that is parallel to the elevation of a building
<i>shang'ang</i>	上昂	up- <i>ang</i>	a transverse arm of a bracket set which projects from the first-step of the inner projection with its head raised to adjust the height of the bracket set
<i>shangpingtuan</i>	上平樑	upper purlin	a purlin next to the ridge purlin
<i>shanmen</i>	山門		the gate of a Buddhist or Daoist temple
<i>shanzhu</i>	山柱	gable column	a Qing term; a column at the center of a gable which supports the ridge
<i>shaojian</i>	稍間	next-to-the end bay	a bay between the end bay(<i>jinjian</i>) and the side bay(<i>cijian</i>)*

<i>shengqi</i>	生起	raising-up	The height of both interior and perimeter columns slightly and gradually increases from the center bay of a building towards the corners. The number of bays determines the increasing height for the corner column.
<i>Shipaigong</i>	實拍拱	immediate bracket	A <i>huagong</i> immediately below a <i>fang</i> or another <i>huagong</i> without any bearing block in between
<i>shoufen</i>	收分	battered	Inclined from the vertical as in a walling construction; it is so constructed that its thickness is gradually decreased with its height.
<i>Shunfuchuan</i>	順楸串	parallel-beam tie	a horizontal timber which connects a pair of columns; located below and parallel to the main beam to provide additional resistance to the movement of columns
<i>shunjichuan</i>	順脊串	parallel-ridge tie	a tie beam below the ridge purlin to reinforce the roof frame
<i>shunshenchuan</i>	順身串	parallel-purlin tie	a structural member of wood connecting two columns under the middle or lower purlin
<i>shuzhu</i>	蜀柱	dwarf pillar	a vertical strut situated on a beam to support a ridge or a purlin
<i>sichuanfu</i>	四椽栿	four-rafter beam	a beam which has a span of four rafters
<i>sijia chuanwu</i>	四架椽屋	four-rafter building	a building with a transverse span of four rafters
<i>sufupen</i>	素覆盆	a plain <i>fupen</i>	
<i>sufang</i>	素方	plain beam	a collective name for long timber beams used in a bracket set unit

<i>suozhu</i>	梭柱	tapered column on both side	a tapered column with a slightly convex curving profile, usually only at the upper third of the shaft
<i>tatou</i>	檣頭		The end of a rectangular timber cut off diagonally and further trimmed into a folding line
<i>tiao</i>	跳	step	Any overhanging member in a bracket set, either <i>gong</i> or <i>ang</i> , transversally projecting from a <i>ludou</i> is considered one <i>tiao</i> .
<i>timu</i>	替木	wooden strip	a bracket-like timber used to hold two abutted purlins together, or to provide support to the end of a purlin*
<i>tingtang</i>	廳堂	mansion type	A type of building, which is smaller in size and lower in rank than <i>diantang</i> , does not have a <i>puzuo</i> unit but may have bracket-sets. The building is formed by parallel transverse frame works connected by longitudinal purlins and ties
<i>touxinzao</i>	偷心造	successive transverse projection	in all brackets, only transverse members are used, without any bracket parallel to the elevation of the building; literally “stolen-heart”
<i>tuofeng</i>	駝峰	camel hump	a solid block or plank curved at the top in the shape of a camel hump, placed above a beam to receive the end of a higher-level beam
<i>tuojiao</i>	托腳	support-footing	an inclined strut which rests on the end of a beam to support and strengthen a purlin above

<i>waitiao</i>	外跳		the part of a bracket-set that projects towards the outside from the central line of eave columns
<i>wuchuanfu</i>	五椽栿	five-rafter beam	a beam which has a span of five rafters
<i>wuneizhu</i>	屋內柱	interior column	columns situated inside a building, to the eave columns
<i>wunei'e</i>	屋內額	interior column-top tie beam	beam that spans between adjacent interior columns with its ends inserted in to the columns, or resting directly upon <i>tuofeng</i>
<i>xia'ang</i>	下昂	down- <i>ang</i>	usually just called <i>ang</i> ; a transverse arm of a bracket set, of which the head is inclined down towards the outside and its tail up against the bottom of a lower purlin to adjust the slope and increase the projection length of the eaves
<i>xianglun</i>	相輪	transmigration wheel	a number of tiers of wheel-like elements in the middle part of a pagoda finial, usually thirteen tiers
<i>xiaomuzuo</i>	小木作	small-scale carpentry	one of thirteen types of building work specified in the <i>Yingzao fashi</i> , which includes internal furnishing, external joinery, minor carpentry and gigantic furniture
<i>xiapingtuan</i>	下平樑	lower purlin	a purlin next to the purlin along the line of eave columns
<i>xiegong</i>	斜拱	oblique arm	oblique <i>huagong</i> of 45° or 30° angle

<i>xuanshan</i>	懸山	overhanging-gable roof	a Qing term; also known for Song as <i>busha liangtouzao</i> 不廈兩頭造; a two-sloped roof which projects beyond the gable walls at both ends.
<i>xuexie</i>	榑楔	foot-wedge	a transitional member to hold a <i>shang'ang</i>
<i>yacaofang</i>	壓槽方	axial beam	a horizontal beam at the bottom of a roof frame and right over the eave columns and the bracket sets
<i>yan'e</i>	簷額	eave-tie	a beam similar to <i>lan'e</i> that spans between eave columns; it is thicker than <i>lan'e</i> and not necessary to be as wide as the facade of the building; its ends project beyond the eave columns (see <i>lan'e</i>).
<i>yanzhu</i>	簷柱	eave column	
<i>yatiao</i>	壓跳		In a capital bracket set, if the inner part of a <i>huagong</i> is made into a <i>tatou</i> instead of a <i>huagong</i> to support a beam, it is called <i>yatiao</i> .
<i>yixinggong</i>	翼形栱	wing-shaped bracket	a decorative bracket parallel to the elevation of the building
<i>yizhuzao</i>	移柱造	displaced-column style	a style used in a <i>tingtang</i> -type building by comprising two or three different structural frames so that the columns are placed without strict symmetry, and some columns are displaced
<i>yongdingzhu</i>	永定柱	permanent-column	columns rising from the ground to support the upper structure in a multi-story building
<i>you'e</i> (<i>xiao'efang</i>)	由額 (小額方)	associate column-tie	a subsidiary beam, situated at a proper height under a <i>lan'e</i> or <i>yan'e</i>

yueliang	月梁	crescent beam	a type of artistically crafted beam with both its top and bottom profiles curved slightly downward
zaojing	藻井	coffer	highly decorated and recessed ceiling
zhaqian	筓牽	one-rafter beam	beam which has a span of one rafter, its outer end supporting a purlin and its inner end mortised into a column
zhi	槩		a subsidiary modular unit; 1 <i>zhi</i> =6 <i>fen</i>
zhiliang	直梁	straight beam	a beam with flat surfaces to be compared to <i>yueliang</i>
zhongpingtuan	中平樑	middle purlin	all purlins between the lower and the upper purlins
zhuchu	柱礎	column base	plinth; a square stone base for a column; its lower part is buried in the platform and upper part exposed and decorated
zhutou puzuo	柱頭鋪作	capital bracket set	a bracket set atop a column
zhuzhi	柱欂	wooden base	round wooden moulding separating the column shaft from its stone base; by the time when the <i>Yingzao fashi</i> was written, it is made of stone instead of wood. ²³⁵
zucai	足材	full standard unit	a subsidiary modular unit; 1 <i>zucai</i> =1 <i>cai</i> +1 <i>zhi</i>

*follows *A visual dictionary of Chinese Architecture* by Guo Qinghua

²³⁵ In *juan 1* of the *Yingzao fashi*, it says,

Zhi is *fu*. *Fu* is the foot of *lan*. *Zhi* is the base of column. In the ancient times, it is made of wood. Now it is made of stone.

欂，枋也，枋，闌足也。檼，柱砥也。古用木，今用石。

TABLES

Table 1. Building List of Jiangnan

	Location	Date	Building
Yuan (1279-1368)	Wuyi 武義	1317	The Main Hall of Yanfusi 延福寺大殿
	Jinhua 金華	1318	The Main Hall of Tianningsi 天寧寺大殿
	Shanghai	1320	The Main Hall of Zhenrusi 真如寺大殿
	Suzhou 蘇州	1338	Ershanmen of Yunyansi 雲岩寺二山門
	Suzhou	1357-1363	Stone chambers and stone hall of Jijiansi 寂鑒寺石殿
	Suzhou	Late Yuan	The Main Hall of Xuanyuangong 軒轅宮正殿

Table 2. List of Modern Research on the Buildings in Jiangnan

	1930s	1950s	1960s	1980s	After 2000
Yanfusi 延福寺		Mentioned in an article about Tianningsi	Measured and surveyed; monographic article published		
Tianningsi 天寧寺		Surveyed and measured; monographic article published		Restored; article about the restoration published	
Zhenrusi 真如寺		Discovered, surveyed and measured; monographic article published	Restored; monographic article published		
Yunyansi 雲岩寺	Surveyed, published as a section of an article				
Jijiansi 寂鑒寺				Monographic article published	
Xuanyuan gong 軒轅宮		Monographic article published			Restored; article about the restoration published

Table 3. Building List of Sichuan and Chongqing

	Location	Date	Building
Yuan 1279-1368	Nanbu 南部	1307	The Main Hall of Lifengguan 體峰觀大殿
	Emei 峨眉	1327	Feilaidian of Dongyuemiao 東嶽廟飛來殿
	Meishan 眉山	1327	The Main Hall of Bao'ensi 報恩寺大殿
	Langzhong 閬中	1333	The Main Hall of Yong'ansi 永安寺大殿
	Langzhong 閬中	1343	Wenchangdian of Wulongmiao 五龍廟文昌殿
	Lushan 蘆山	Yuan	The Main Hall of Qinglongsi 青龍寺大殿
	Lushan 蘆山	Yuan	Pingxianglou of Jianghouci 姜侯祠平襄樓
	Zitong 梓潼	Yuan	Pantuoshidian of Qiqushan Damiao 七曲山大廟盤陀石殿
	Nanbu 南部	Yuan	Yong'anmiao 永安廟
Early Ming 1368-1398	Emei 峨眉	1391	Xiandian of Dongyuemiao 東嶽廟香殿
	Pingwu 平武	Ming	The Main Hall of Dou-Kousi 豆叩寺正殿
	Zutibg 梓潼	Ming	The Main Hall of Guandimiao 關帝廟正殿
	Tongnan 潼南	Ming	The Main Hall of Dubaisi 獨柏寺正殿

Table 4. Dimensions of the Plans in Jiangnan

Building	Date	Façade(M)	Side(M)	Façade/Side
Main Hall of Baoguosi	1013	11.92	13.35	0.89
Main Hall of Baoshengsi	1073	12.95	13.2	0.95
Main Hall of Yanfusi	1317	8.5	8.6	0.99
Main Hall of Tianningsi	1318	12.72	12.72	1.00
Main Hall of Zhenrusi	1320	13.4	13	1.03
Main Hall of Xuanyuangong	1333-1368	13.8	11.4	1.21

Table 5. Modular Dimensions of the Bracket Sets in Jiangnan (Unit:cm)²³⁶

Phase	Building	Date	WM	Grade	WC	TC	WC/TC	WZ	WC/ WZ
Song	Main Hall of Baoguosi	1013	580	IV	21.8	14.5	1.5(0%)	9	2.4(-4%)
	Main Hall of Baoshengsi	1073	585	NA	NA	NA	NA	NA	NA
	<i>Yingzao fashi</i>	1103					1.5		2.5
Yuan	Main Hall of Yanfusi	1317	460	VIII-VII	15.5	10	1.55(+3%)	6	2.58(+3%)
	Main Hall of Tianningsi	1318	616	VII-VI	17	10.5	1.62(+8%)	6	2.83(+13.2%)
	Ershanmen, Yunyansi	1338	NA	NA	NA	NA	NA	NA	NA
Ming	Main Hall of Xuanyuangong	NA	560	VIII	14	9	1.56(+4%)	5.5	2.55(+2%)
	Main Hall of Zhenrusi	NA	611	VIII	13.5	9	1.5(0%)	5.5	2.45(-2%)

Table 6. Modular Dimensions of the Bracket Sets in Sichuan (Unit:cm)²³⁷

Phase	Building	Date	WM ²³⁸	Grade	WC	TC	WC/TC	WZ	WC/ WZ
Song	<i>Yingzao fashi</i>	1103					1.5		2.5
	Feitianzangdian of Yunyansi	1181	740	VI-V	19.5	13	1.5(0%)	10.5	1.86(-25.6%)
Yuan	The Main Hall of Lifengguan	1307	405	VII-VI	17.5	12.5	1.4(-6.7%)	9	1.94(-22.4%)
	Feilaidian of Dongyuemiao(waiyan puzuo)	1327	490	V-IV	21.5	14	1.53(2%)	9.5	2.26(-9.6%)
	Feilaidian of Dongyuemiao (shencaonei puzuo)	1327		VI	18	11	1.64(9.3%)	6.5	2.77(10.8%)
	Feilaidian of Dongyuemiao(xiaomuzuo)	1327		<VIII	13	8.5	1.53(2%)	5.5	2.36(-5.6%)
	Wenchangdian of Wulongmiao	1343	430	<VIII	13			9	1.44(-42.4%)
	The Main Hall of Qinglongsi	NA	777	VI	18	12	1.5(0%)	7.5	2.4(-4%)
	Pantuoshidian of Qiqushan Damiao	NA	355	VII-VI	17	12	1.41(-6%)	7	2.43(-2.8%)
	Xiangdian of Dongyuemiao	1391	666	VI	18.5	12.5	1.48(-1.3%)	8.5	2.12(-15.2%)
Ming	The Main Hall of Guandimiao	NA	800	VI	18	12	1.5(0%)	9	2(20%)

²³⁶ In this table, WC=width of *cai*, TC=thickness of *cai*, WM=width of *mingjian*, WZ=width of *zhi*.²³⁷ In this table, WC=width of *cai*, TC=thickness of *cai*, WM=width of *mingjian*, WZ=width of *zhi*.²³⁸ The width of *mingjian* does not count those that are widened because of *jianzhuzao* or *yizhuzao*. Width of *mingjian* in this table is the measurement of the original *mingjian*.

Table 7. *Litiao* of the buildings in Sichuan

Building	Date	Number of <i>puzuo</i>	<i>litiao</i>
Feitianzangdian of Yunyansi	1181	Four	<i>touxinzao</i>
Main Hall of Lifengguan	1307	Five	<i>touxinzao</i>
Feilaidian of Dongyuemiao	1327	Six	<i>jixinzao</i>
Main Hall of Bao'ensi	1327	Five	<i>jixinzao</i>
Main Hall of Yong'ansi	1333	Six	<i>touxinzao</i>
Wenchangdian of Wulongmiao	1343	Six	<i>touxinzao</i>
Main Hall of Qinglongsi	Yuan	Five	<i>jixinzao</i>
Pantuoshidian of Qiqushan Damiao	Yuan	Five	<i>touxinzao</i>
Yong'anmiao	Yuan	Five	<i>touxinzao</i>
Pingxianglou of Jianghouci	NA	Five	<i>jixinzao</i>
Xiangdian of Dongyuemiao	1391	Five	<i>jixinzao</i>
Main Hall of Guandimiao	Ming	Six	<i>touxinzao</i>
Main Hall of Dou-kousi	Ming	Six	<i>touxinzao</i>
Main Hall of Dubaisi	Ming	five	<i>touxinzao</i>

Table 8. *Dangong* or *chonggong* on *tiao*

Building	Date	Dangong	<i>chonggong</i>
Feitianzangdian of Yunyansi	1181	Yes	No
Main Hall of Lifengguan	1307	Yes	No
Feilaidian of Dongyuemiao	1327	Yes	Yes
Main Hall of Bao'ensi	1327	Yes	Yes
Main Hall of Yong'ansi	1333	Yes	No
Wenchangdian of Wulongmiao	1343	Yes	Yes
Main Hall of Qinglongsi	Yuan	Yes	Yes
Pantuoshidian of Qiqushan Damiao	Yuan	Yes	No
Yong'anmiao	Yuan	Yes	No
Pingxianglou of Jianghouci	unknown	Yes	No
Xiangdian of Dongyuemiao	1391	No	Yes
Main Hall of Guandimiao	Ming	Yes	No
Main Hall of Dou-kousi	Ming	NA	NA
Main Hall of Dubaisi	Ming	Yes	No

Table 9. Configuration of the members atop eave columns

Area	Building	Date	<i>lan'e</i>	<i>yan'e</i>	<i>chuomufang</i>	<i>pupaifang</i>	<i>dianban</i>	<i>shuzhu</i>	<i>you'e</i>	<i>yueliangzao</i>	Fig.
Jiangnan	Yanfusi	1317	Yes						Yes		3.3o-1
	Tianningsi	1318	Yes								3.3o-2
	Zhenrusi	1320	Yes			Yes	Yes		Yes		1.3b
	Ershanmen	1338	Yes								3.3o-3
	Xuayuangong	Yuan	Yes			Yes					3.3o-4
Sichuan	Lifengguan	1307	NA		Yes	Yes	Yes			Yes	2.1b
	Feilaidian	1327		Yes	Yes	Yes	Yes			Yes	2.2c
	Bao'ensi	1327		Yes		Yes	Yes		Yes		2.3b
	Yong'ansi	1333	NA		Yes	Yes	Yes			Yes	2.4d
	Wulongmiao	1343		Yes		Yes	Yes			Yes	2.5b
	Qinglongsi	Yuan		Yes		Yes	Yes	Yes		Yes	2.6b
	Pantuoshidian	Yuan		Yes						Yes	2.8c
	Yong'anmiao	Yuan		Yes		Yes			Yes	Yes	2.9b
	Pingxianglou	Yuan	Yes			Yes		Yes		Yes	2.7b
	Xiangdian	1391	Yes		Yes	Yes	Yes	Yes			2.2j
	Guanwangmiao	Ming		Yes		Yes			Yes		2.8l
	Doukousi	Ming		Yes		Yes					2.10b
	Dubaisi	Ming	NA			Yes	Yes				2.11a

Table 10. Similarities and Dissimilarities in Jiangnan and Sichuan

	Particularities in Jiangnan	Particularities in Sichuan	Common Features
PLAN			
Shapes of plan	Only three-by-three bay squarish plans	both three-by-three and three-by-four bay squarish plans	Most buildings using squarish plans, rectangular plan only used in gate houses and large-scale buildings
Bays	First bay on side elevations expanded	Middle bay on side elevations expanded	
Elevation	Facade widens in proportion to side elevations		
BRACKET SET			
<i>cai</i>	diminishes over time; proportion follows the <i>Yingzao fashi</i> .	No regularities in the grade; proportion different from the <i>Yingzao fashi</i>	
Intercolumnar sets	installed in each bay	No regularities in arrangement	Numbers of intercolumnar sets in one bay increases over time.
Number of puzuo	deceases over time	No regularity	
Touxinzao and jixinzao	More <i>touxinzao</i>	More <i>jixinzao</i>	More <i>dangong</i>
Fubigong	following the <i>Yingzao fashi</i>	not following the <i>Yingzao fashi</i>	<i>chonggong</i> is replacing <i>dangong</i>
Dancai and zucai	Differentiation in early Yuan buildings	No differentiation	
Xiegong	None	Yes	
Linggong	Yes, but no <i>shuatou</i> in Yuan	None	
Tiaowo	Most bracket sets are <i>angwei tiaowo</i> with regular <i>xia'ang</i> .	Most bracket sets are <i>angting tiaowo</i> with irregular <i>xia'ang</i> .	

<i>Shang'ang and xuexie</i>	Having <i>shang'ang</i> ,	No <i>shang'ang</i>	both having regular <i>xuexie</i> and big <i>xuexie</i>
<i>Jia'ang</i>	In some buildings, <i>jia'ang</i> only applied on capital bracket sets		In some buildings, <i>jia'ang</i> applied on both capital and intercolumnar sets
<i>Ejiaodou</i>	Yes	None	
ROOF STRUCTURE			
<i>Diantangzao and tingtangzao</i>		one building using <i>diantangzao</i>	Most buildings using <i>tingtangzao</i> ; some buildings using a mixed-style
<i>Beams and rafters</i>	In terms of three-by-three bay plan, most buildings have either rafters across	In terms of three-by-three bay plan, buildings spanned by from four two ten rafters	
<i>Beam-bearing members</i>	Using <i>dingtougong</i> and <i>litiao huagong</i>	Using <i>shipaigong</i> , <i>yatiao</i> or nothing	
<i>Crescent beams</i>	Yes	none	
<i>Timber members atop eave column</i>	Every building using <i>lan'e</i> ; half using <i>pupaifang</i>	Using either <i>lan'e</i> or <i>yan'e</i> , mostly arched; most having <i>pupaifang</i> ; also using <i>shuzhu</i> , <i>dianban</i> and <i>chuomufang</i>	
<i>Shuzhu and tuofeng</i>	Both used in Yuan; <i>shuzhu</i> disappeared in late Yuan and early Ming, replaced by <i>ludou</i> ; complex decorative profile on the foot of <i>shuzhu</i>	Most buildings using <i>shuzhu</i> , only Doukousi having <i>tuofeng</i> ; less complex profile on the foot of <i>shuzhu</i>	
<i>zhuchu</i>	Using <i>zhuzhi</i>	No <i>zhuzhi</i> ; some buildings even have no <i>zhuchu</i>	
<i>suozhu</i>	Yes	none	

Table 11. Comparison of Yuan buildings in Sichuan, Jiangnan and Northern China

		Sichuan	North	Jiangnan
1	<i>jianzhuzao</i> 減柱造/ <i>yizhuzao</i> 移柱造	YES	YES	NO
2	<i>xiegong</i> 斜栱	YES	YES	NO
3	<i>yatiao</i> 壓跳	YES	YES	NO
4	<i>yixinggong</i> 翼形栱	YES	YES	NO
5	<i>linggong</i> 令栱/ <i>shuatou</i> 耍頭	NO	YES	YES
6	<i>chuantongshi</i> 傳統式	NO	YES	YES
7	<i>da'eshi</i> 大額式	YES	YES	NO
8	<i>chuomufang</i> 綽幕方	YES	YES	NO
9	<i>yueliang</i> 月梁	NO	NO	YES
10	<i>dingtougong</i> 丁頭栱	NO	NO	YES

MAPS

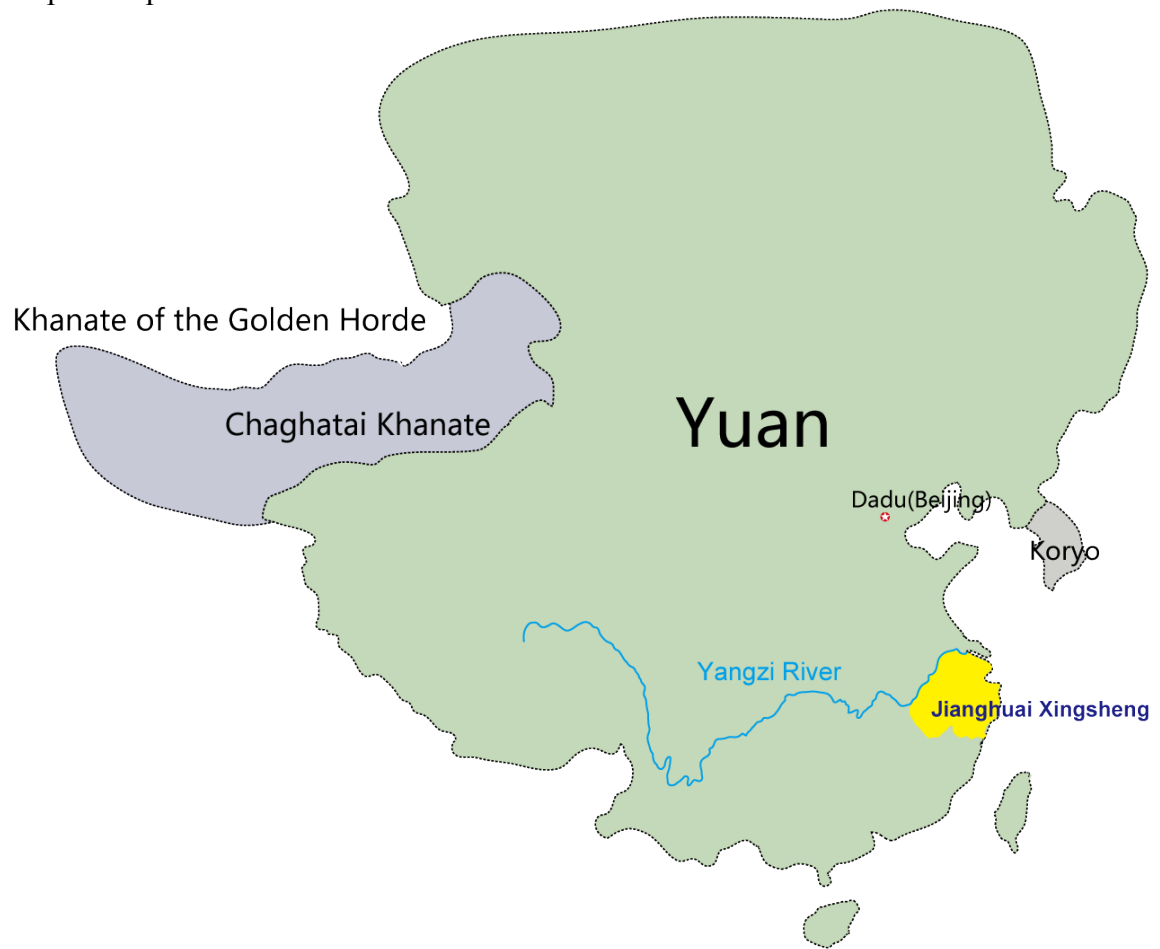
Map 1. Map of China Today



Map 2. Map of Southern Song and Its Neighbors in 1208



Map 3. Map of Yuan in 1280



Map 4. Map of Jiangnan, with structures plotted



The Main Hall, Xuanyuangong(1369)



Xitiansi, Jijiansi(1357-1363)



The Second Gate, Yunyansi(1338)



The Main Hall, Tianningsi(1318)

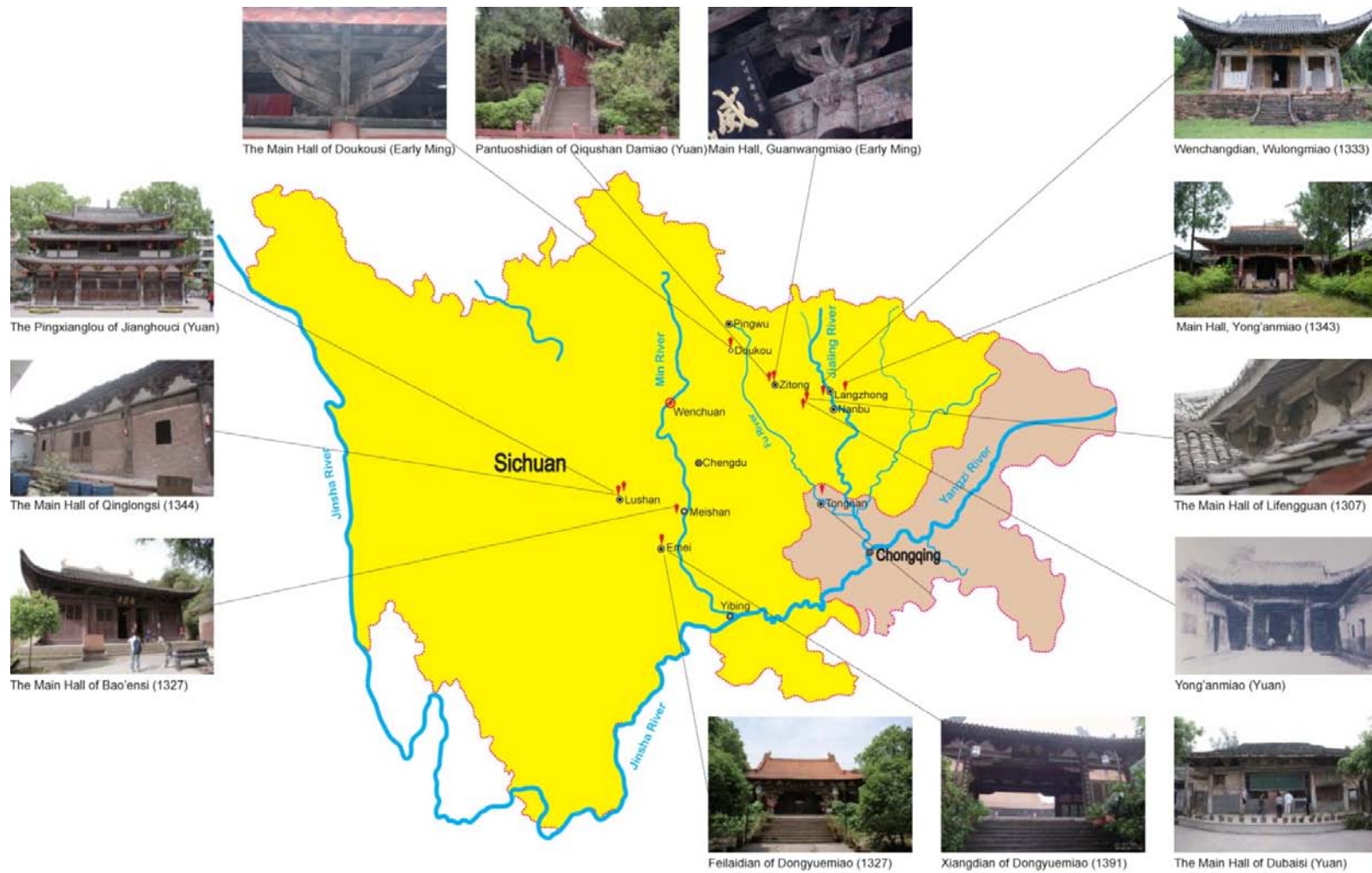


The Main Hall, Yanfusi(1317)

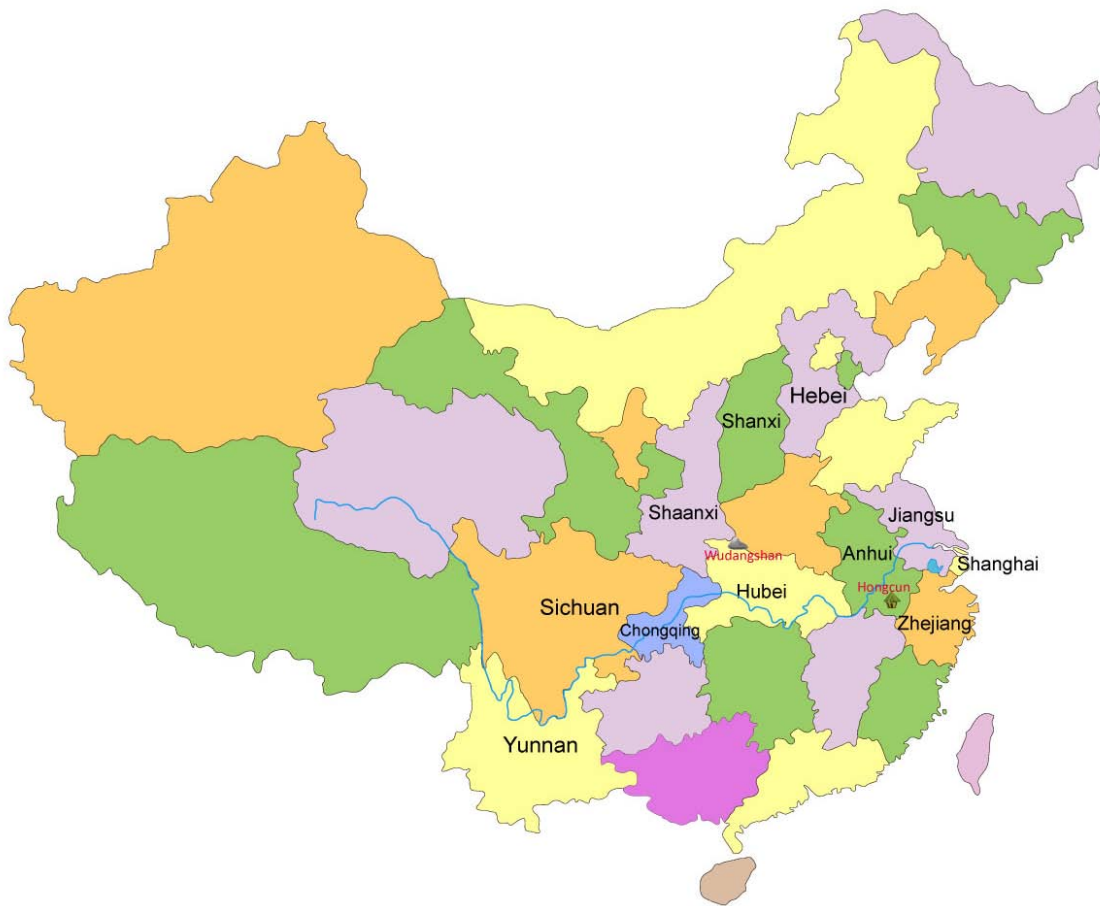


The Main Hall, Zhenrusi(1320)

Map 5. Map of Sichuan and Chongqing, with structures plotted



Map 6. Map of China Today



ILLUSTRATIONS

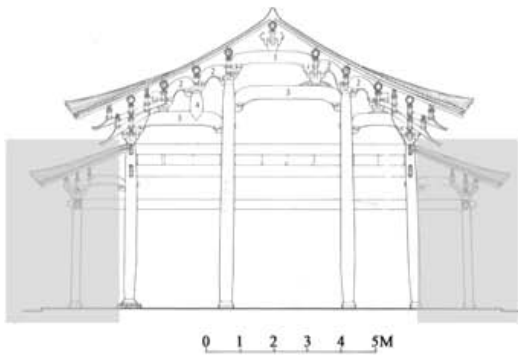


Figure 1.1a North-south sectional view(present),
Main Hall, Yanfusi

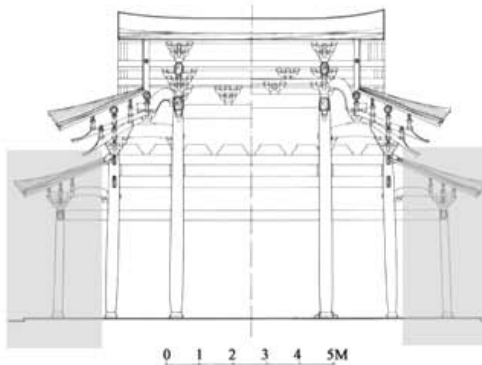


Figure 1.1b East-west sectional view(present),
Main Hall, Yanfusi

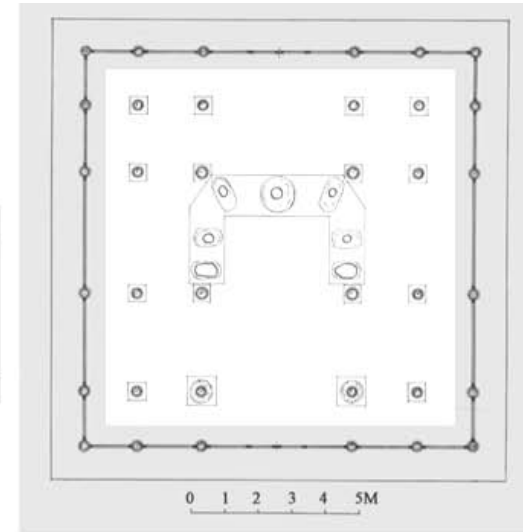


Figure 1.1c Plan of Main Hall(present), Yanfusi

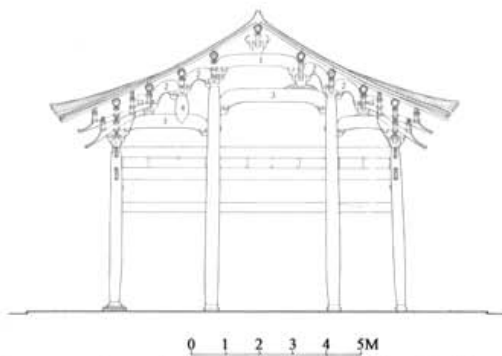


Figure 1.1d North-south sectional view(original),
Main Hall, Yanfusi

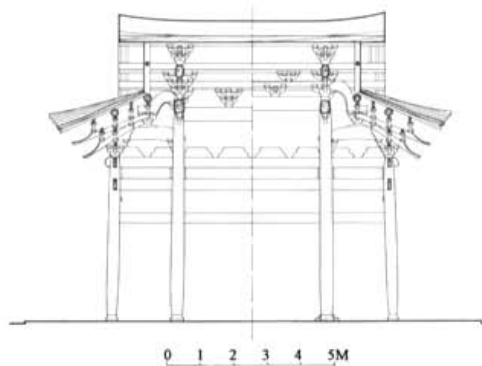


Figure 1.1e East-west sectional view(original),
Main Hall, Yanfusi

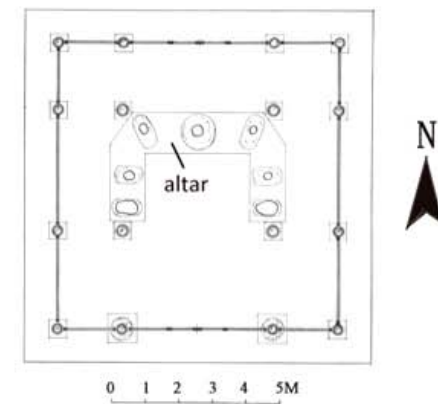


Figure 1.1f Plan of Main Hall(original), Yanfusi

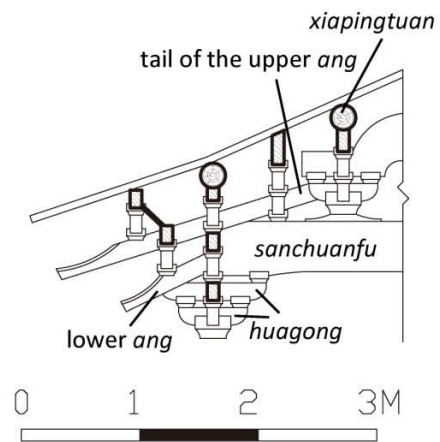


Figure 1.1g Sectional view of capital set, Main Hall, Yanfusi



Figure 1.1h Picture of the rear view of capital set, Main Hall, Yanfusi



Figure 1.1i Picture of the front view of capital(right) and intercolumnar(left) sets, Main Hall, Yanfusi

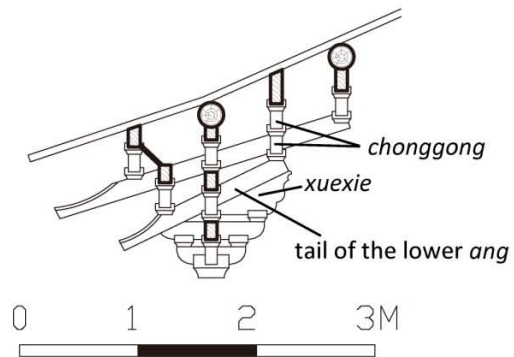


Figure 1.1j Sectional view of intercolumnar set Main Hall, Yanfusi



Figure 1.1k Picture of the rear view of intercolumnar set, Main Hall, Yanfusi



Figure 1.1m Picture of structure of front bay, Main Hall, Yanfusi



Figure 1.1o Picture of shuttle column

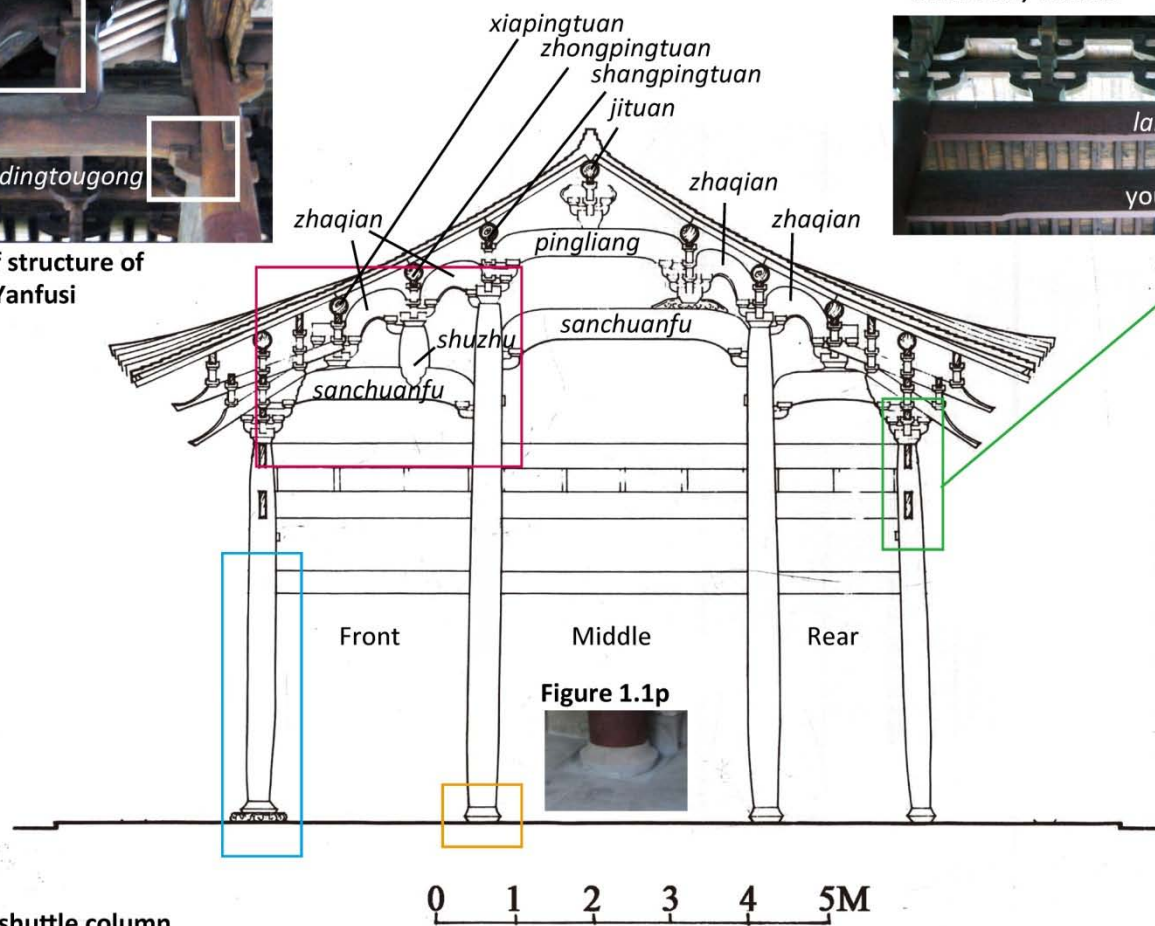


Figure 1.1n Picture of lan'e and you'e, Main Hall, Yanfusi





Figure 1.2a Inscription on east middle *sanchuanfu*

大元延佑五年歲在戊午六月庚申吉旦重建恭祝



Figure 1.2b Inscription on west middle *sanchuanfu*

今上皇帝聖躬萬萬歲福及文武官僚六軍百姓者



Figure 1.2c Inscription on east front *sanchuanfu*

宣武將軍婺州路沿海上海戶寧顯祖助元中統鈔伍拾錠



Figure 1.2d Inscription on central interior tie-beam

崇善庵比丘永誠樂施寶鈔壹佰錠

Figure 1.2e Plan of Main Hall, Tianningsi

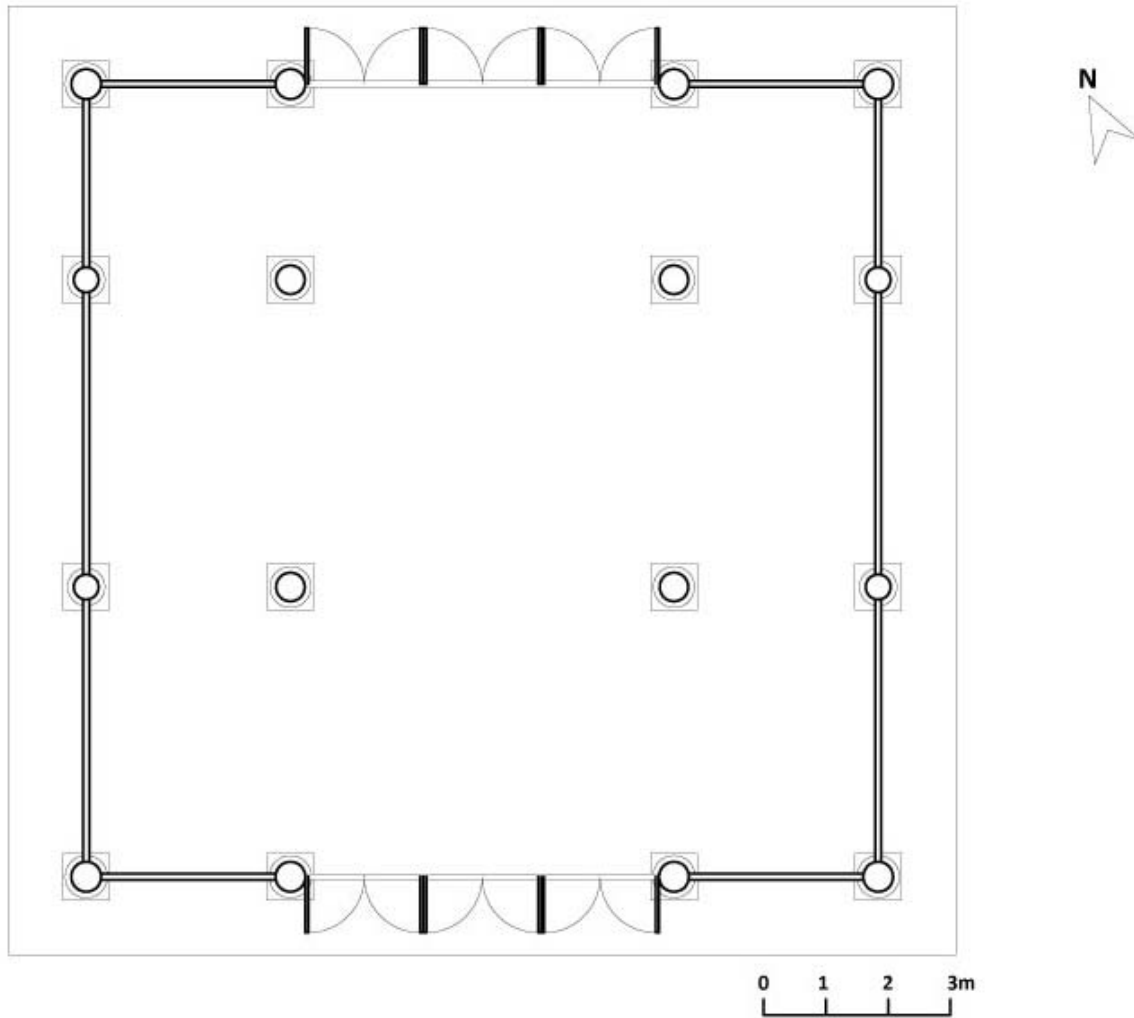




Figure 1.2f Front view of capital set, Main Hall of Tianningsi

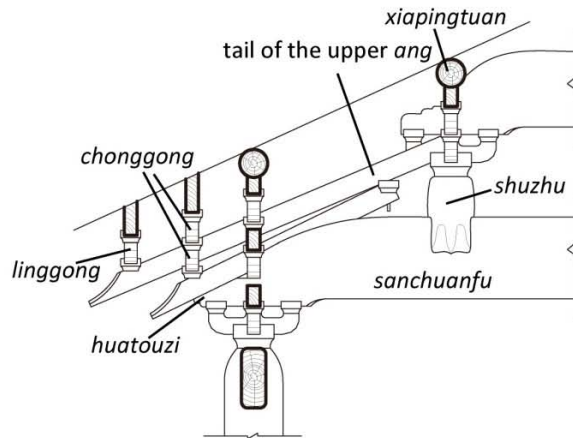


Figure 1.2g Sectional view of capital set, Main Hall of Tianningsi



Figure 1.2h Rear view of capital set, Main Hall of Tianningsi



Figure 1.2i Front view of intercolumnar set, Main Hall of Tianningsi

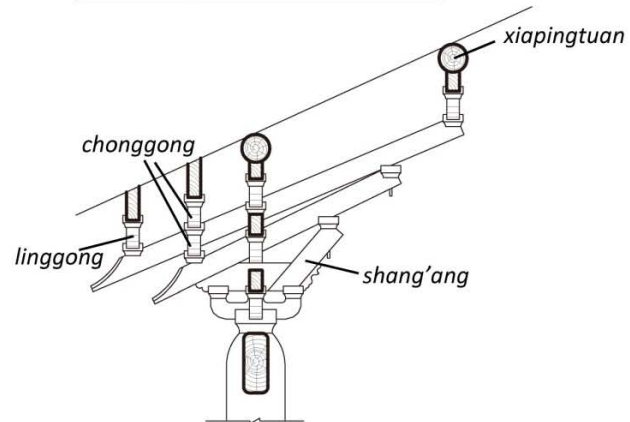


Figure 1.2j Sectional view of intercolumnar set, Main Hall of Tianningsi



Figure 1.2k Rear view of intercolumnar set, Main Hall of Tianningsi

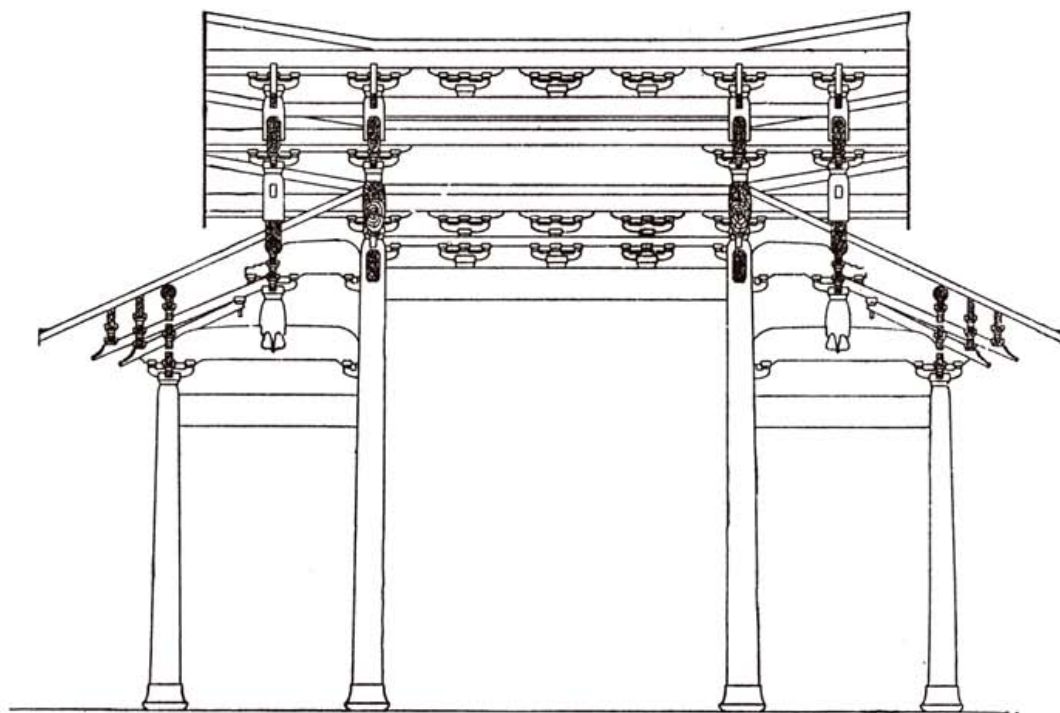


Figure 1.2l East-west sectional view, Main Hall of Tianningsi

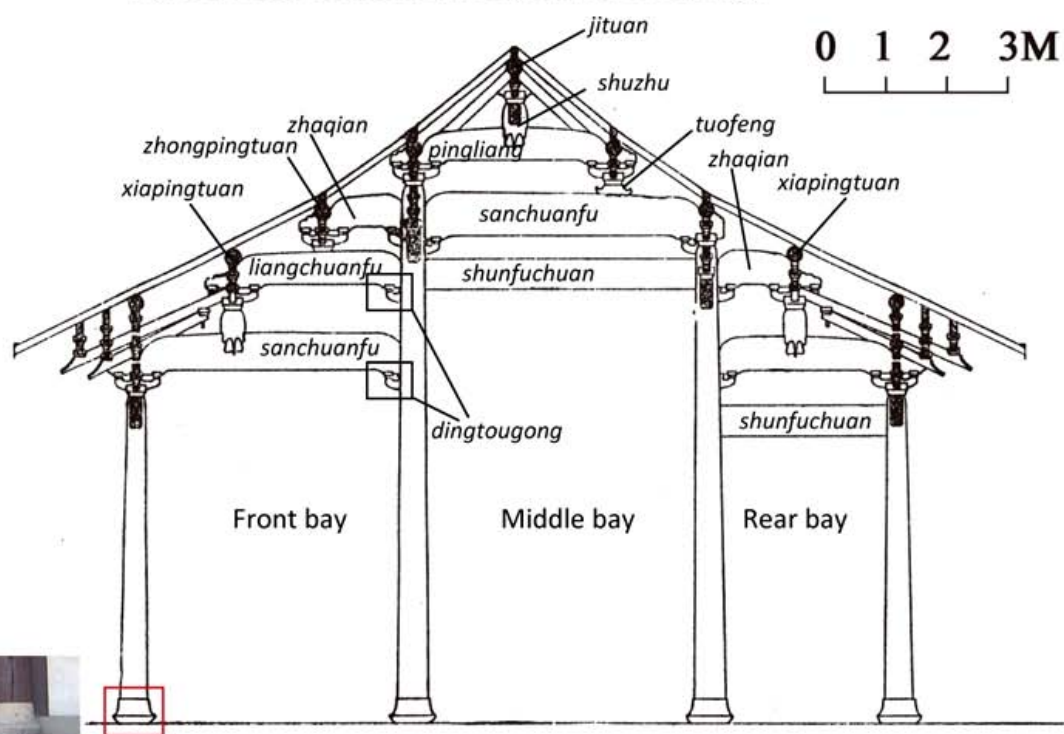


Figure 1.2n

Figure 1.2m North-south sectional view, Main Hall of Tianningsi

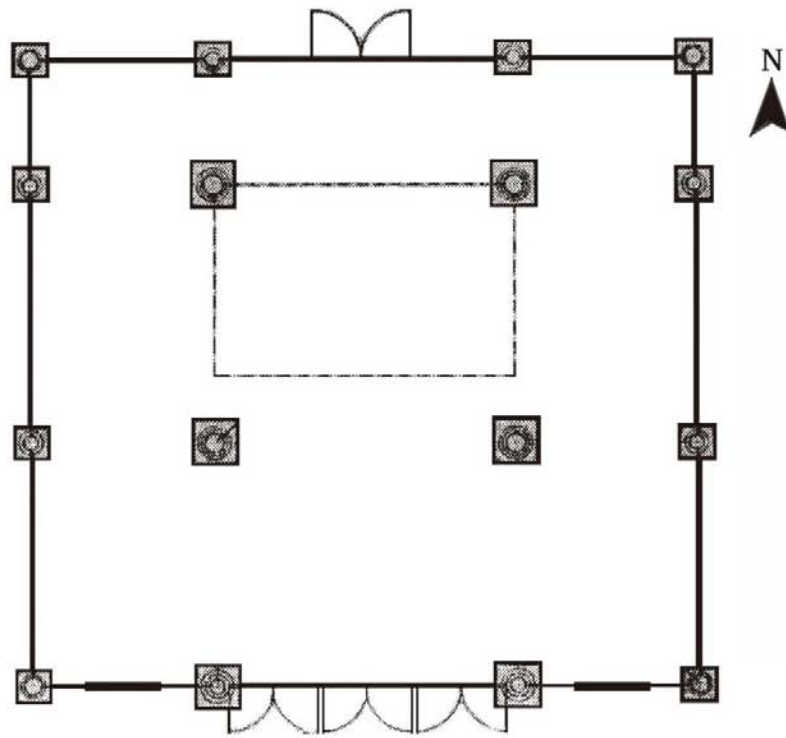


Figure 1.3a Plan of Main Hall, Zhenrusi

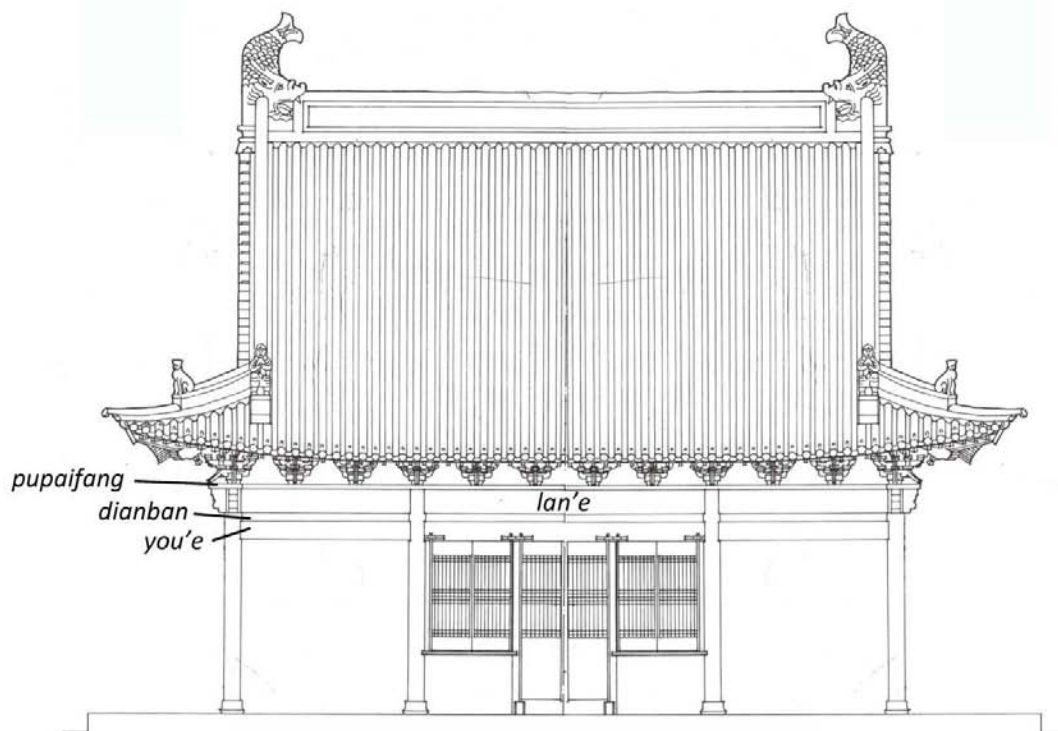


Figure 1.3b Facade of Main Hall, Zhenrusi

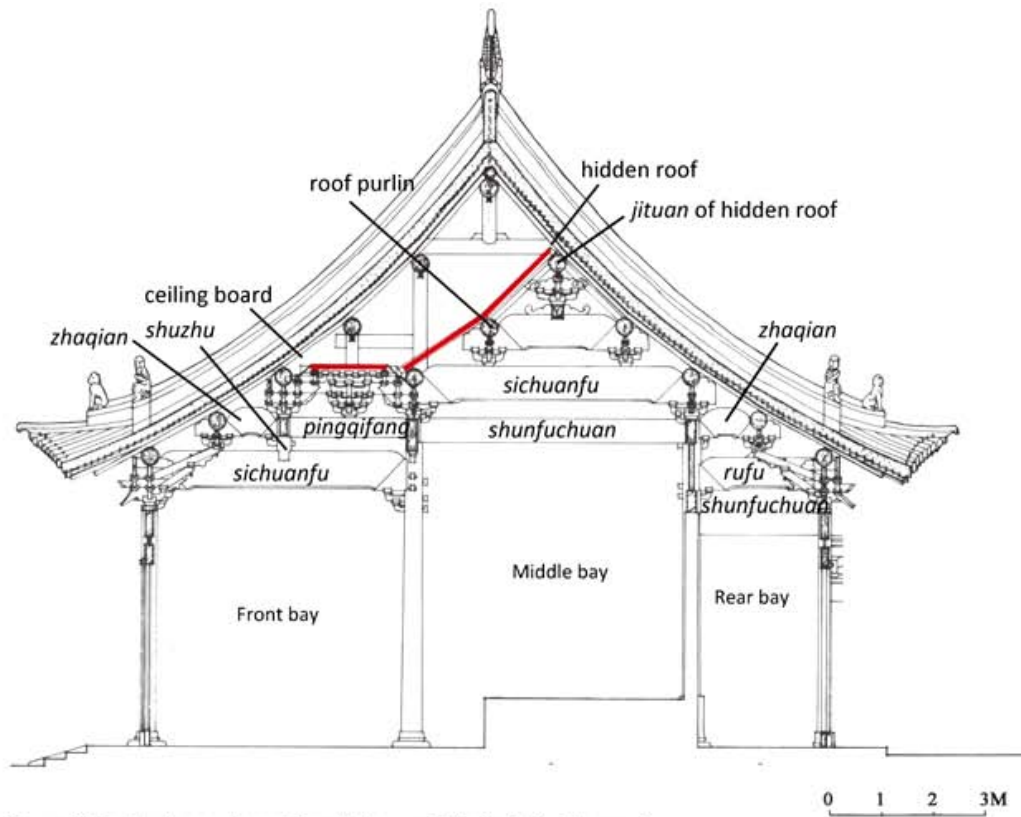


Figure 1.3c North-south sectional view of Main Hall, Zhenrusi

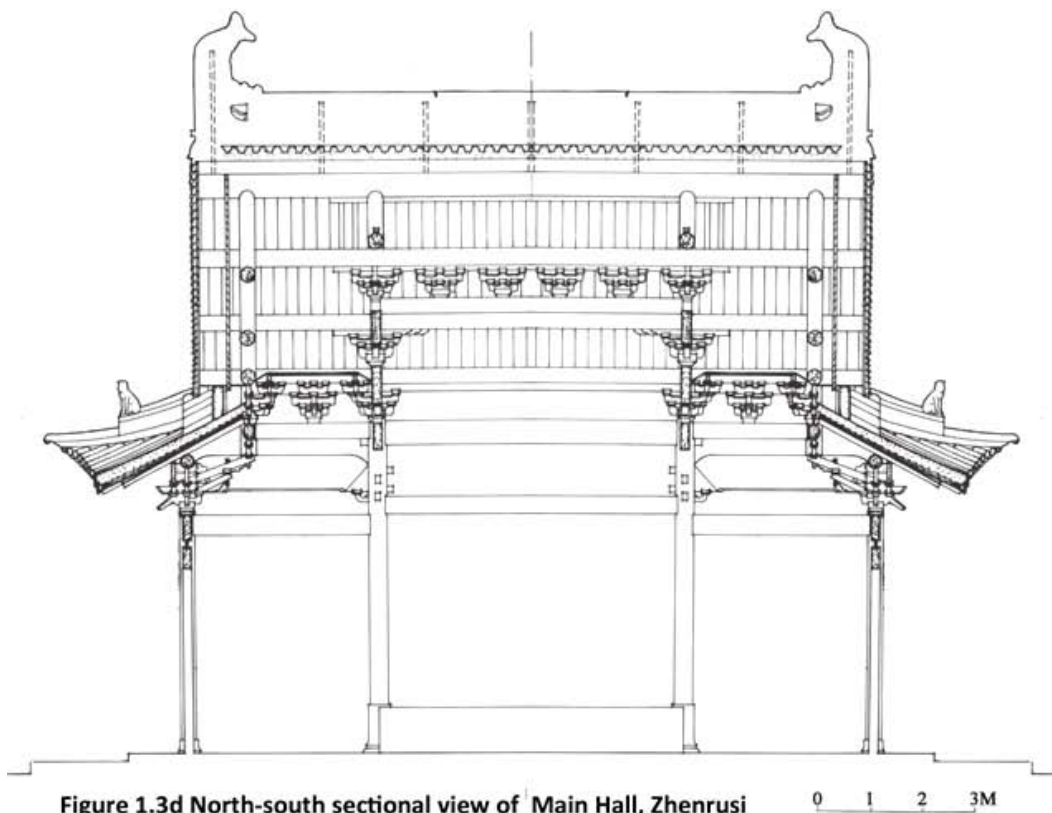


Figure 1.3d North-south sectional view of Main Hall, Zhenrusi



Figure 1.3e Picture of capital set on facade, Main Hall, Zhenrusi

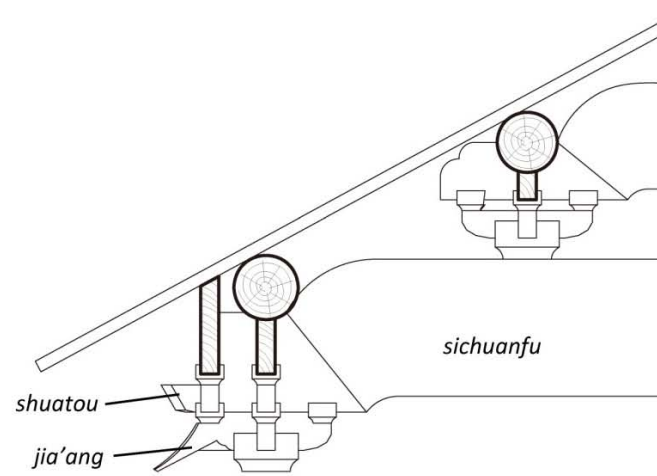


Figure 1.3f Sectional view of capital set, Main Hall, Zhenrusi

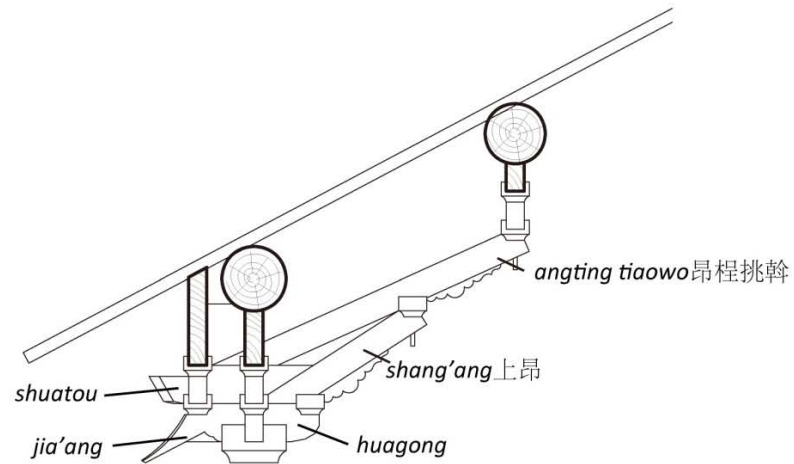


Figure 1.3g Sectional view of intercolumnar set, Main Hall, Zhenrusi

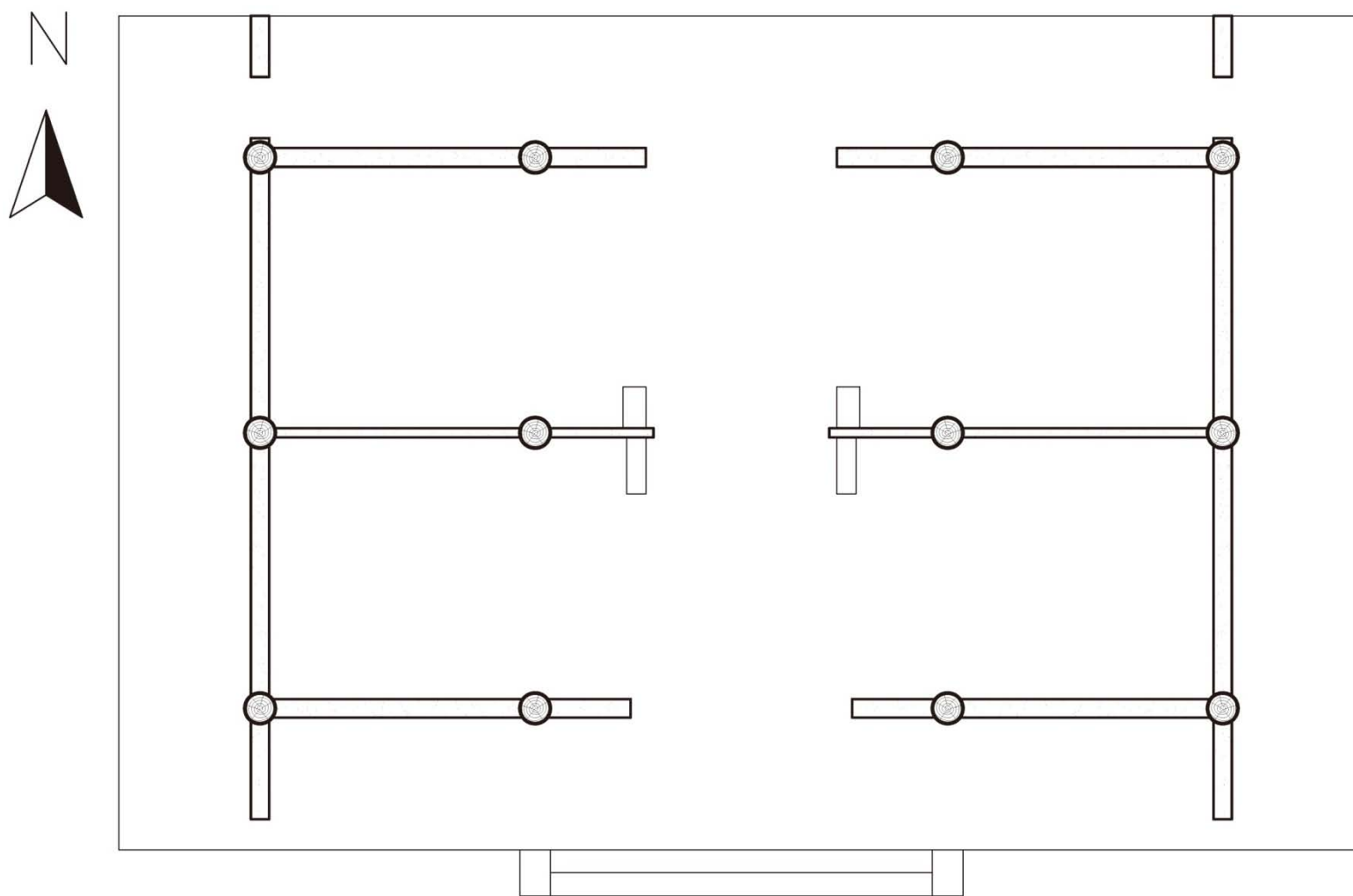


Figure 1.4a Plan of Ershanmen, Yunyansi



Figure 1.4b Front view of capital set, Ershanmen, Yunyansi

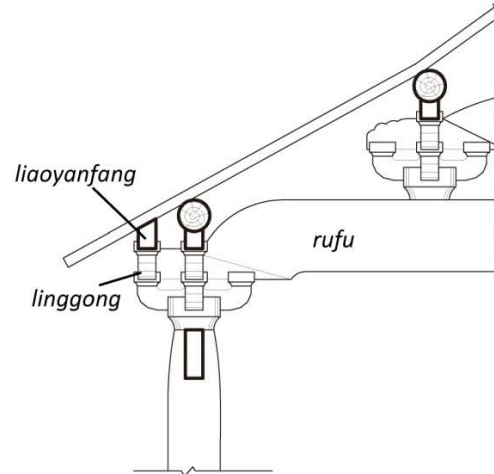


Figure 1.4c Sectional view of capital set, Ershanmen, Yunyansi

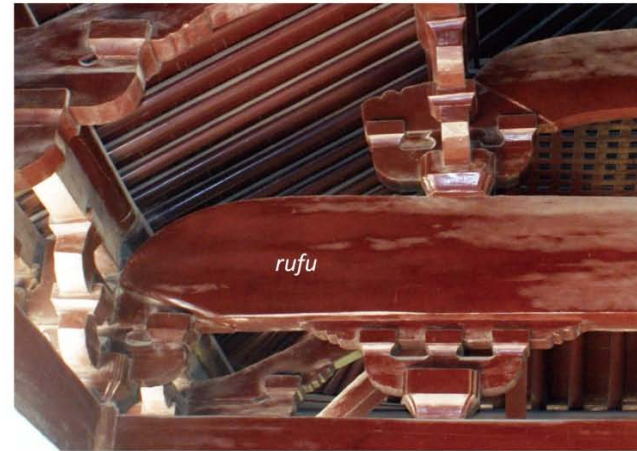


Figure 1.4d Rear view of capital set, Ershanmen, Yunyansi



Figure 1.4e Intercolumnar set, Ershanmen, Yunyansi

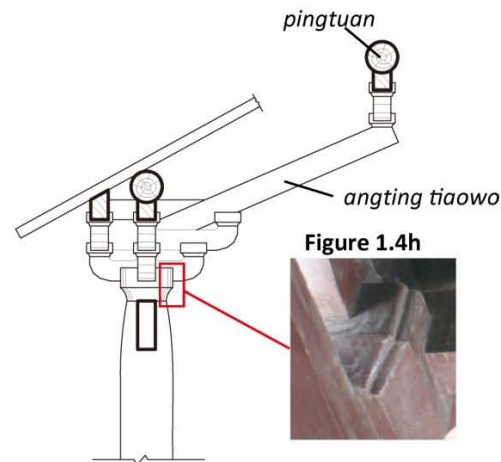


Figure 1.4f Sectional view of intercolumnar set, Ershanmen, Yunyansi



Figure 1.4g Rear view of intercolumnar set, Ershanmen, Yunyansi



Figure 1.4j

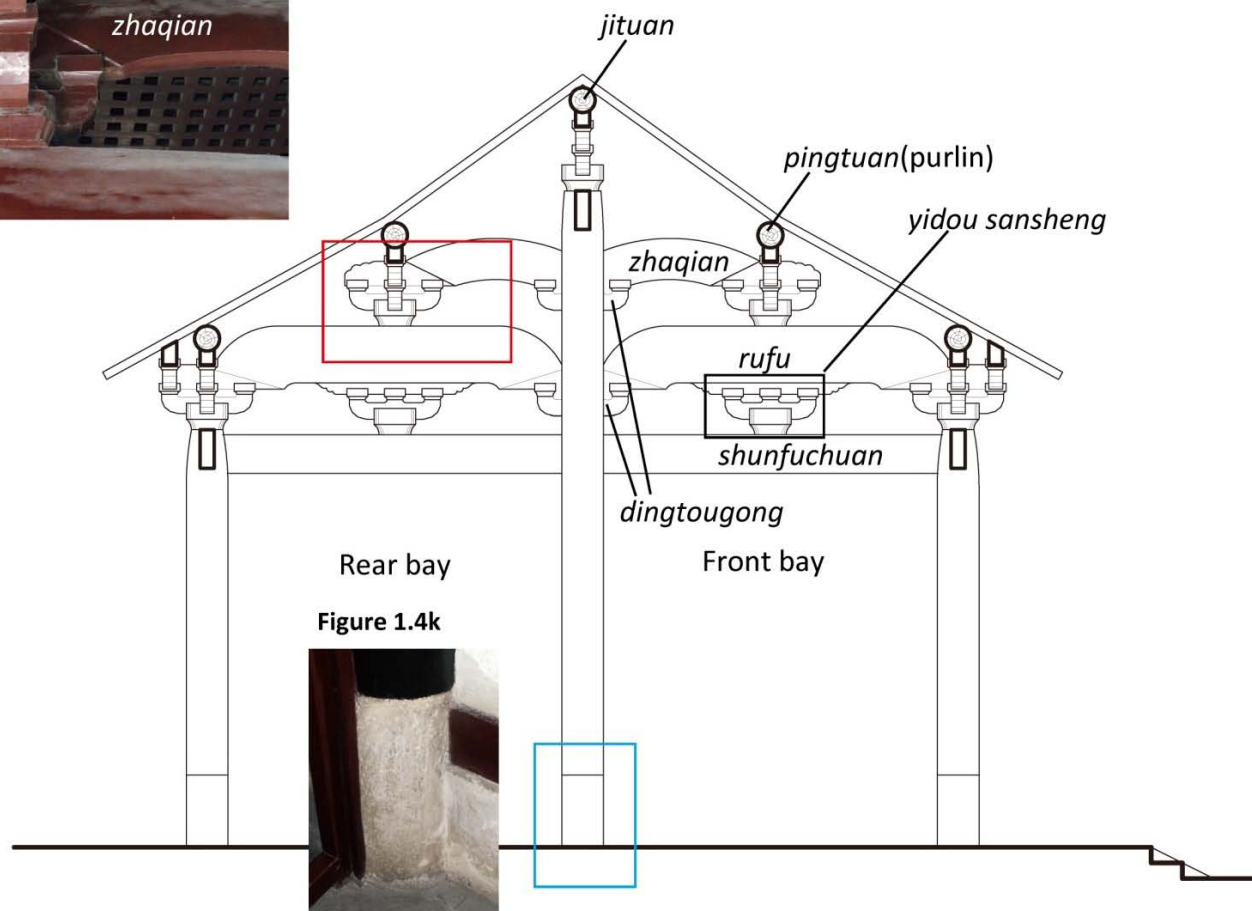


Figure 1.4k



Figure 1.4i North-south sectional view of Ershanmen, Yunyansi.

Figure 1.4m



Figure 1.4n

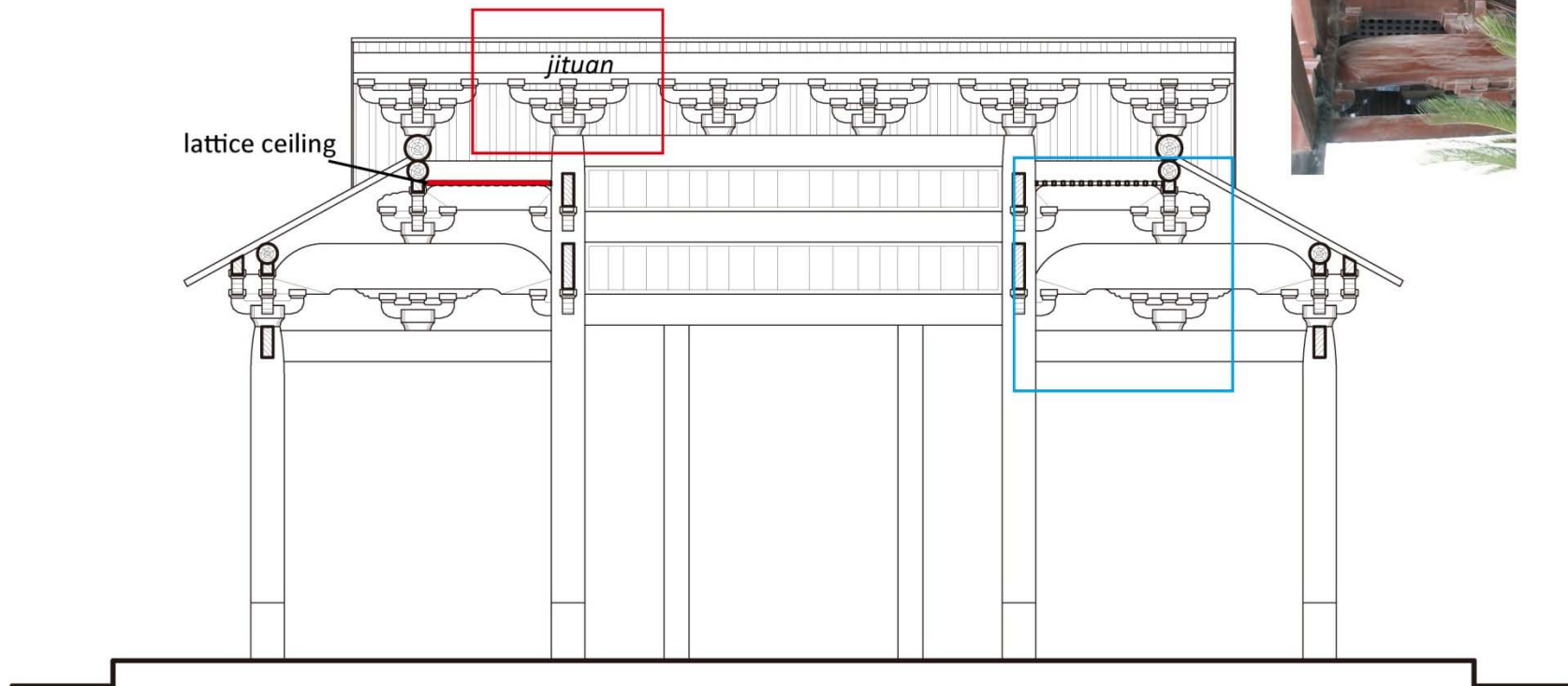


Figure 1.4l East-west sectional view of Ershanmen, Yunyansi.

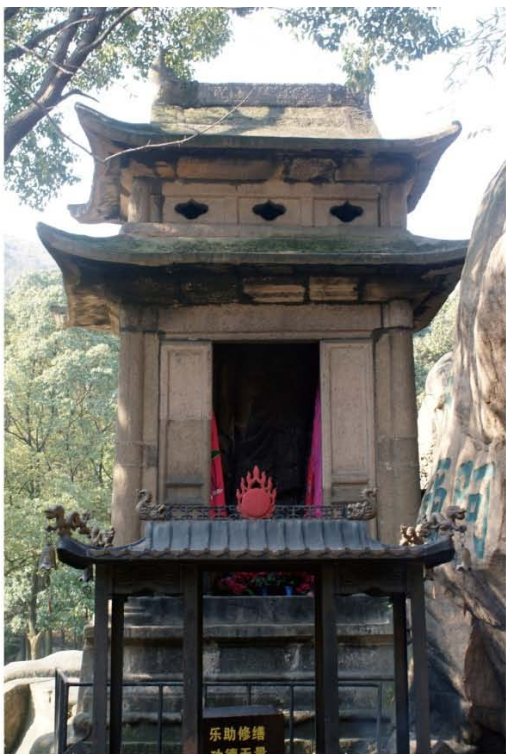


Figure 1.5a Jileyuan, Jijiansi



Figure 1.5c Zhuzhi of Main Hall, Zhenrusi



Figure 1.5d Zhuzhi of Main Hall, Tianningsi



Figure 1.5f Doushuaigong, Jijiansi



Figure 1.5b Column base of Jileyuan, Jijiansi



Figure 1.5e Column base of Main Hall, Yanfusi

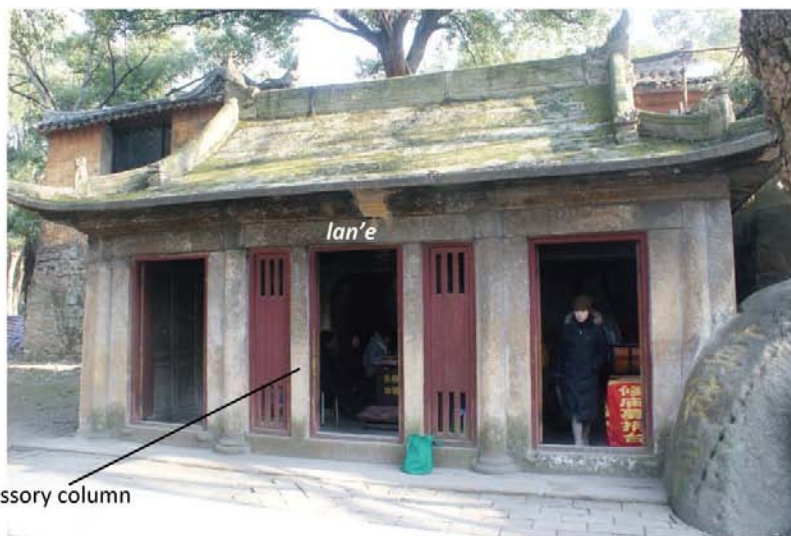


Figure 1.5g Xitiansi(the Stone Hall), Jijiansi



Figure 1.5h Middle niche, Xitiansi, Jijiansi



Figure 1.5i Column base, Xitiansi, Jijiansi



Figure 1.5j Zaojin of the middle niche, Xitiansi, Jijiansi

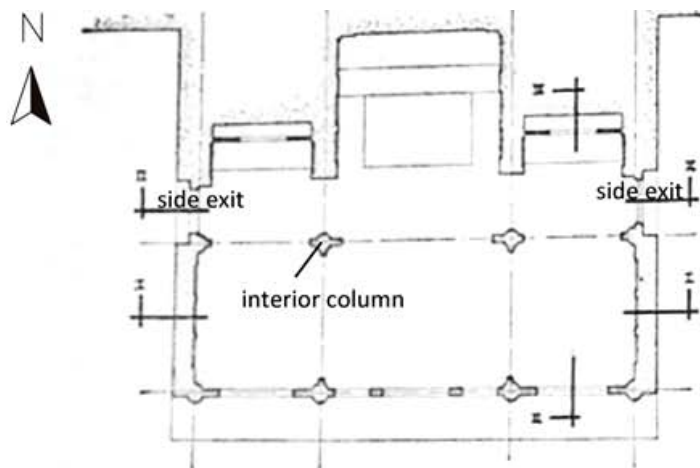


Figure 1.5k Plan of Xitiansi, Jijiansi (after Liu Xujie, 1979)

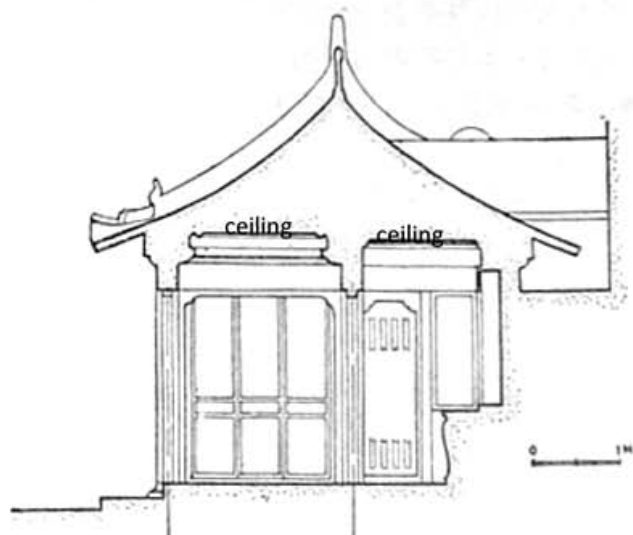


Figure 1.5m North-south sectional view of Xitiansi, Jijiansi (after Liu Xujie, 1979)

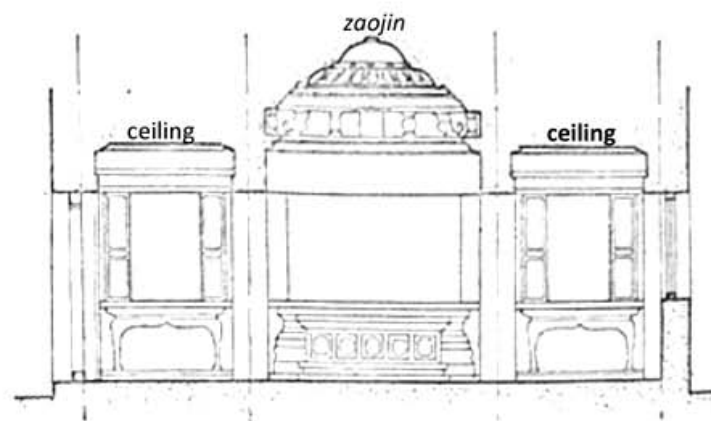


Figure 1.5l East-west sectional view showing three niches, Xitiansi, Jijiansi (after Liu Xujie, 1979)

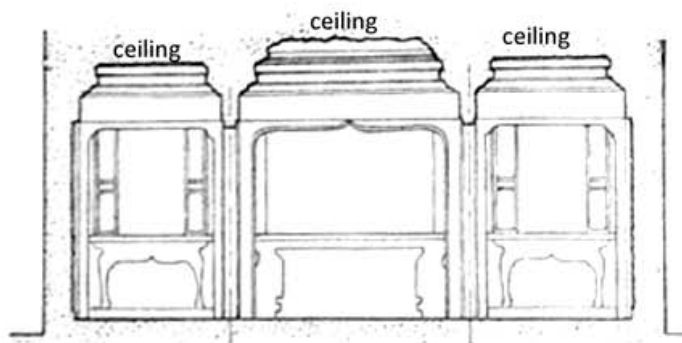


Figure 1.5n East-west sectional view showing front three bays, Xitiansi, Jijiansi (after Liu Xujie, 1979)

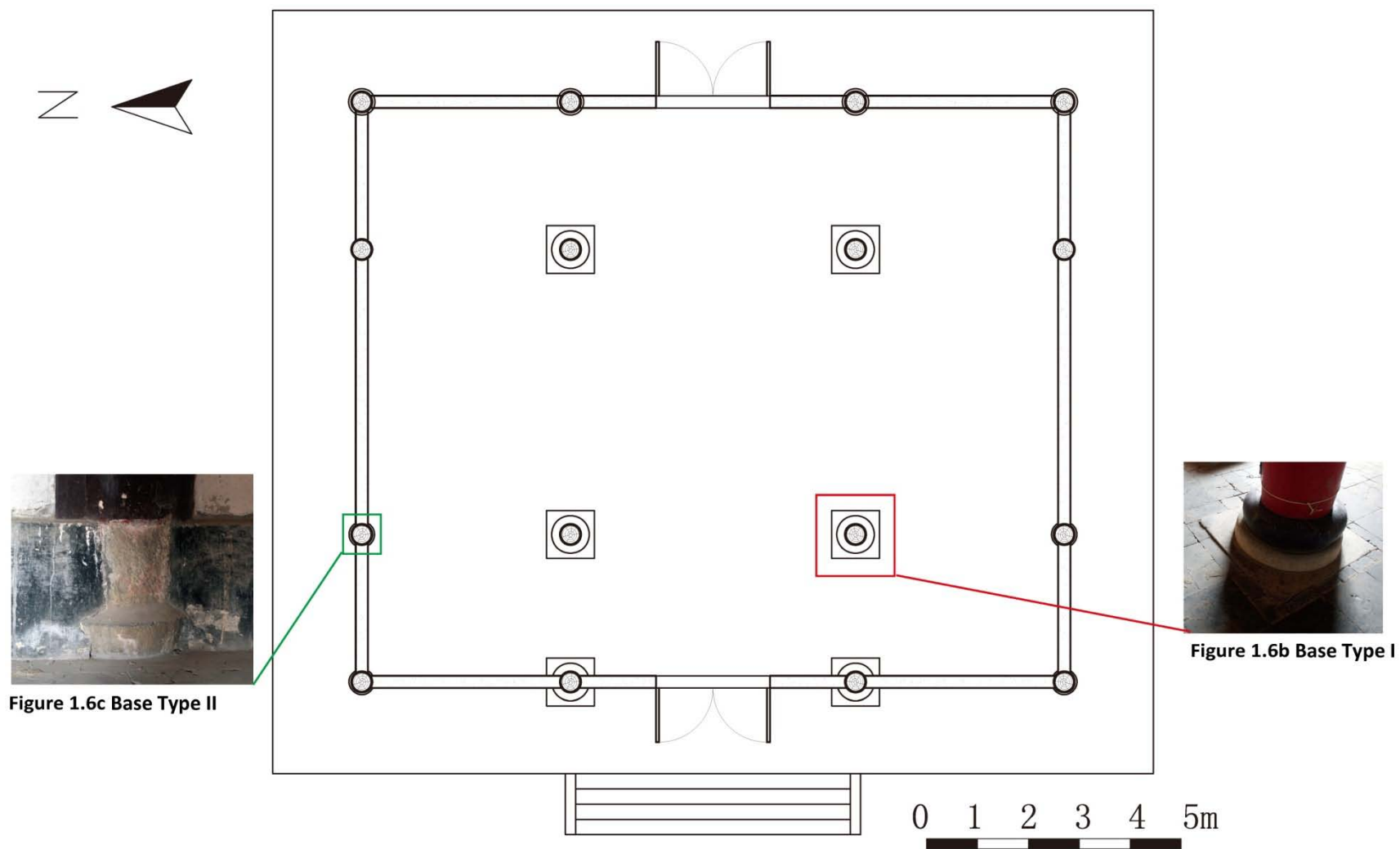


Figure 1.6a Plan of Main Hall, Xuanyuangong

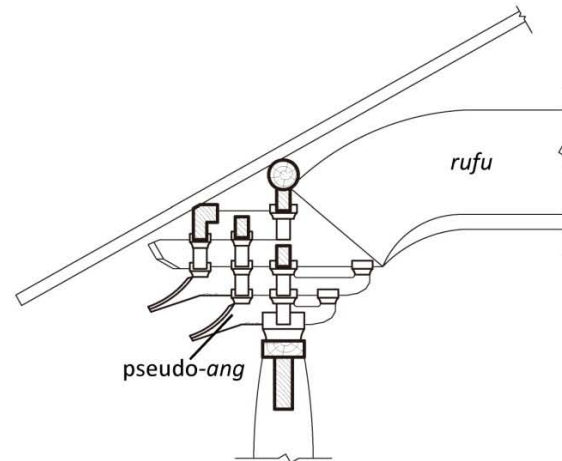


Figure 1.6d Sectional view of capital set,
Main Hall of Xuanyuangong



Figure 1.6e Rear view of capital set,
Main Hall of Xuanyuangong



Figure 1.6f Front view of capital set,
Main Hall of Xuanyuangong

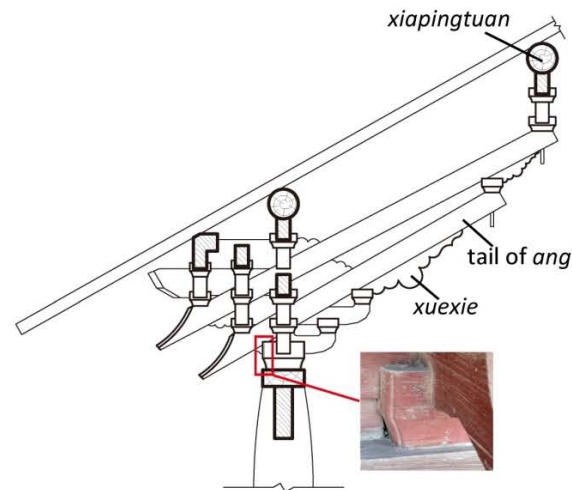


Figure 1.6g Sectional view of intercolumnar set,
Main Hall of Xuanyuangong

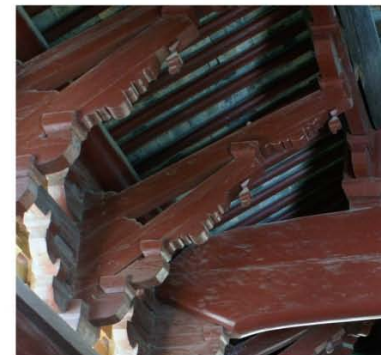


Figure 1.6h Rear view of capital set,
Main Hall of Xuanyuangong

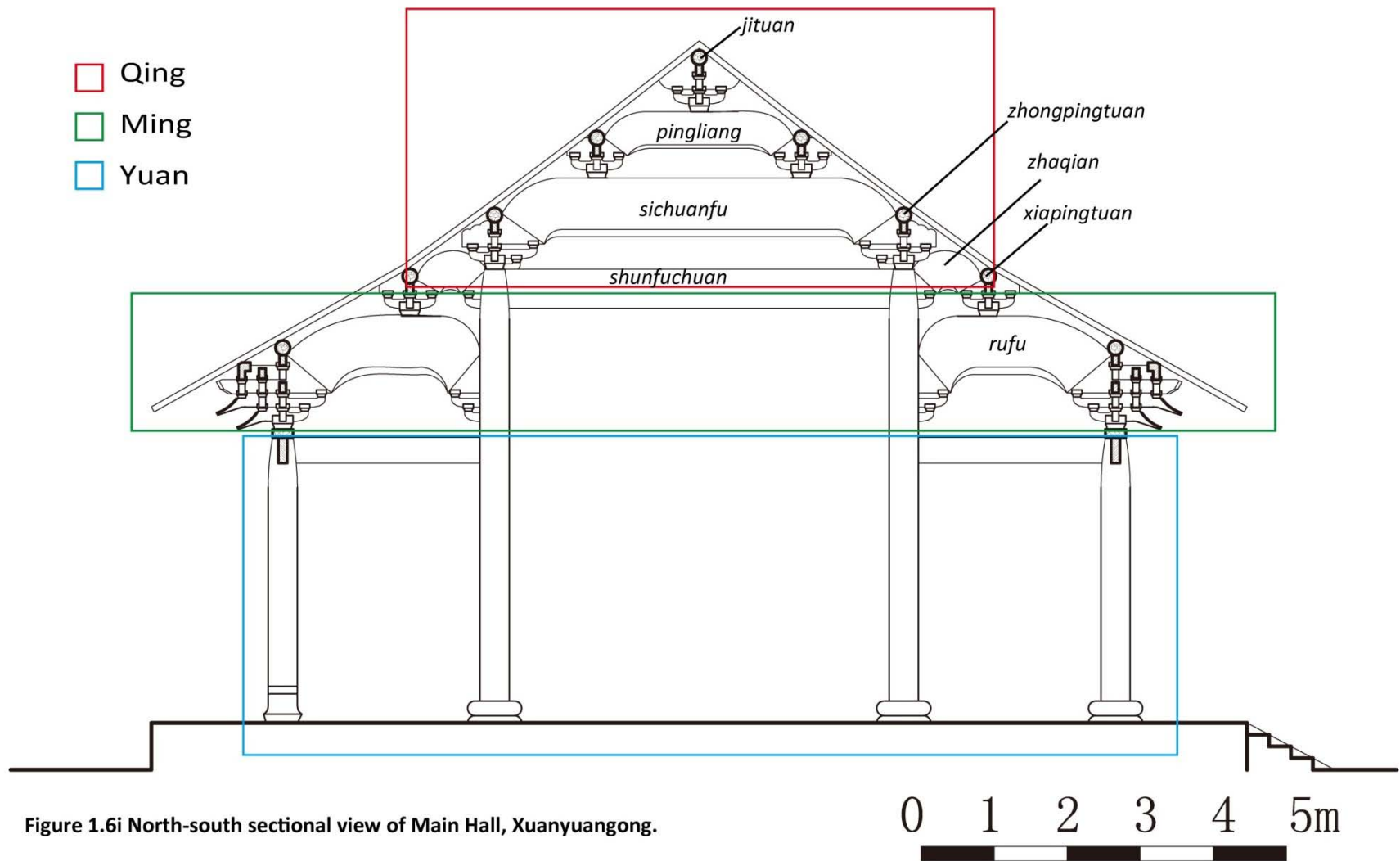


Figure 1.6i North-south sectional view of Main Hall, Xuanyuangong.

Figure 2.1a Plan of the Main Hall, Lifengguan

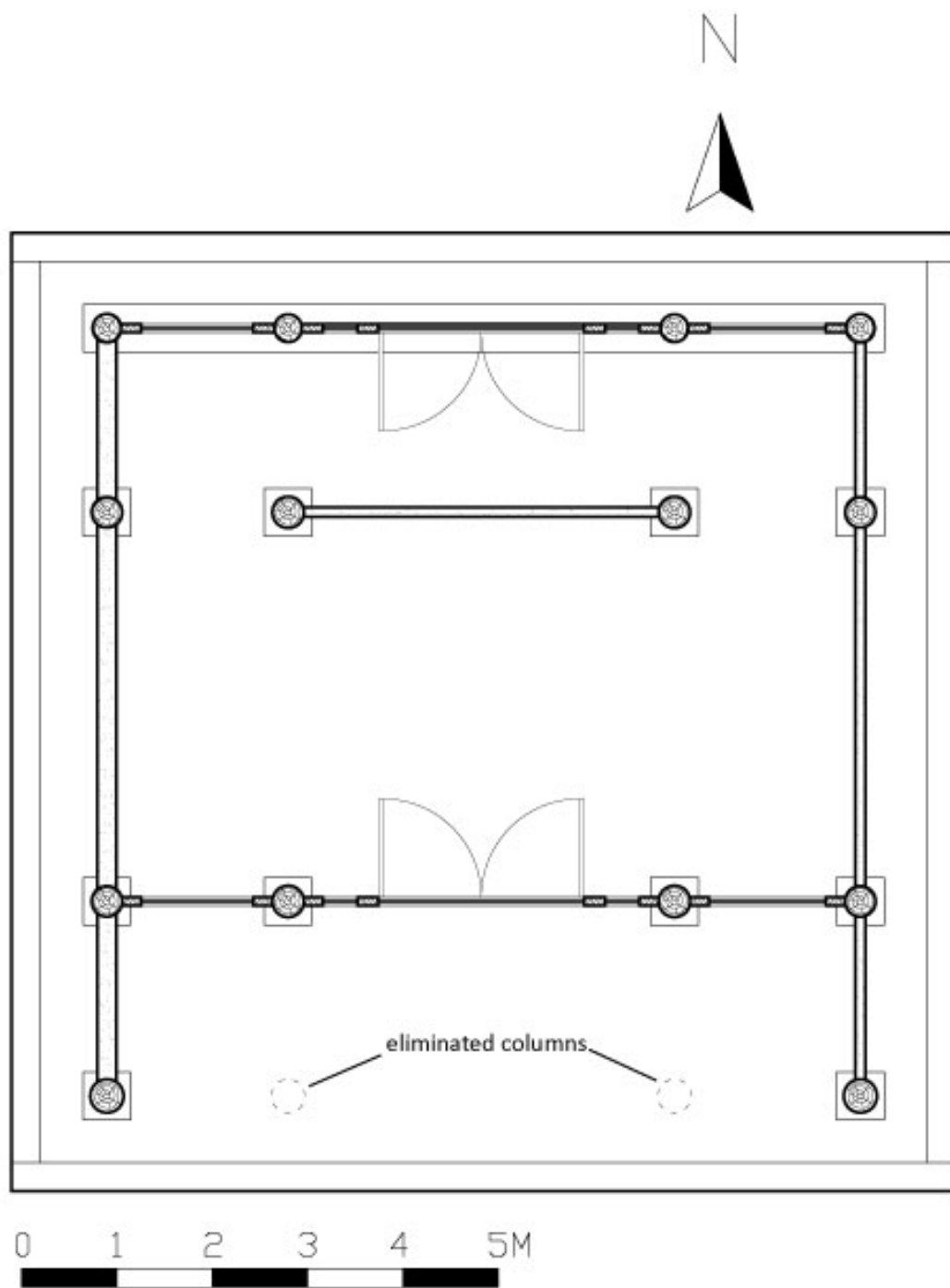


Figure 2.1b The Front Elevation of the Main Hall, Lifengguan

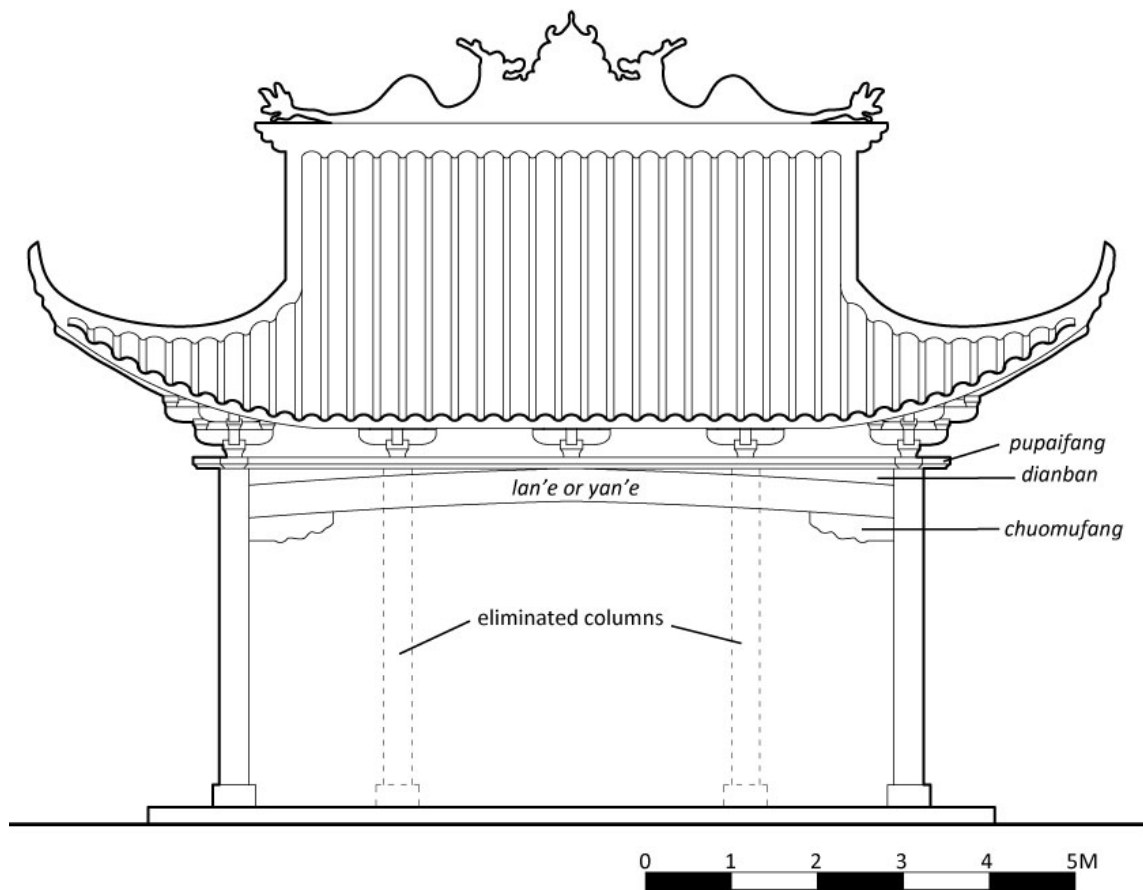




Figure 2.1c Bracket sets on the rear elevation, the Main Hall of Lifengguan



Figure 2.1d Bracket sets on the side elevation, the Main Hall of Lifengguan

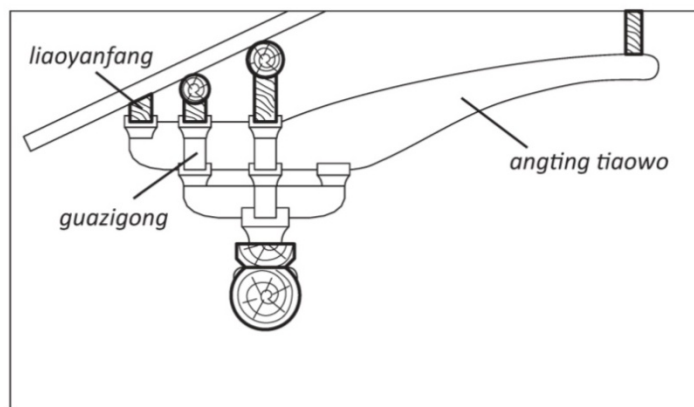


Figure 2.1e Sectional view of the middle intercolumnar set on the facade, the Main Hall of Lifengguan

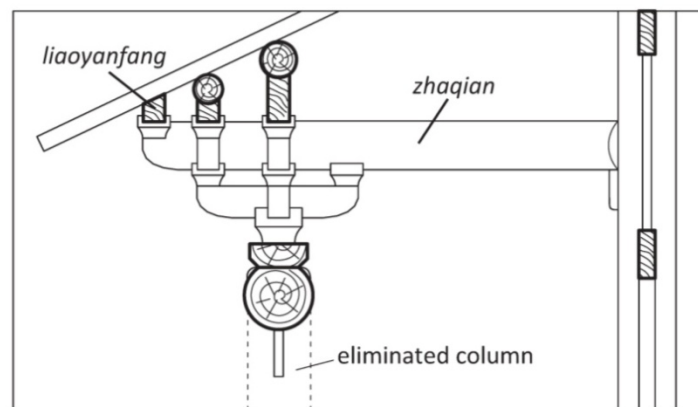


Figure 2.1f Sectional view of the side intercolumnar set on the facade, the Main Hall of Lifengguan

Figure 2.1g North-south Sectional View of the Main Hall, Lifengguan

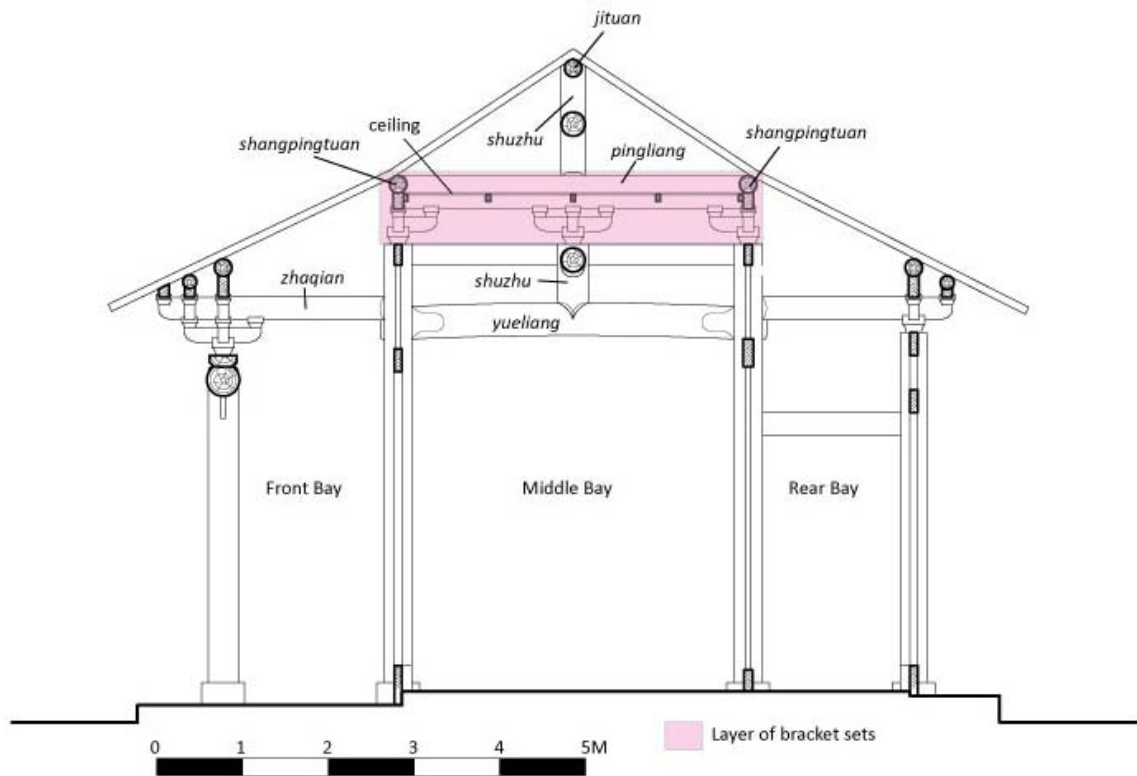


Figure 2.2a Layout of the Dongyuemiao Complex

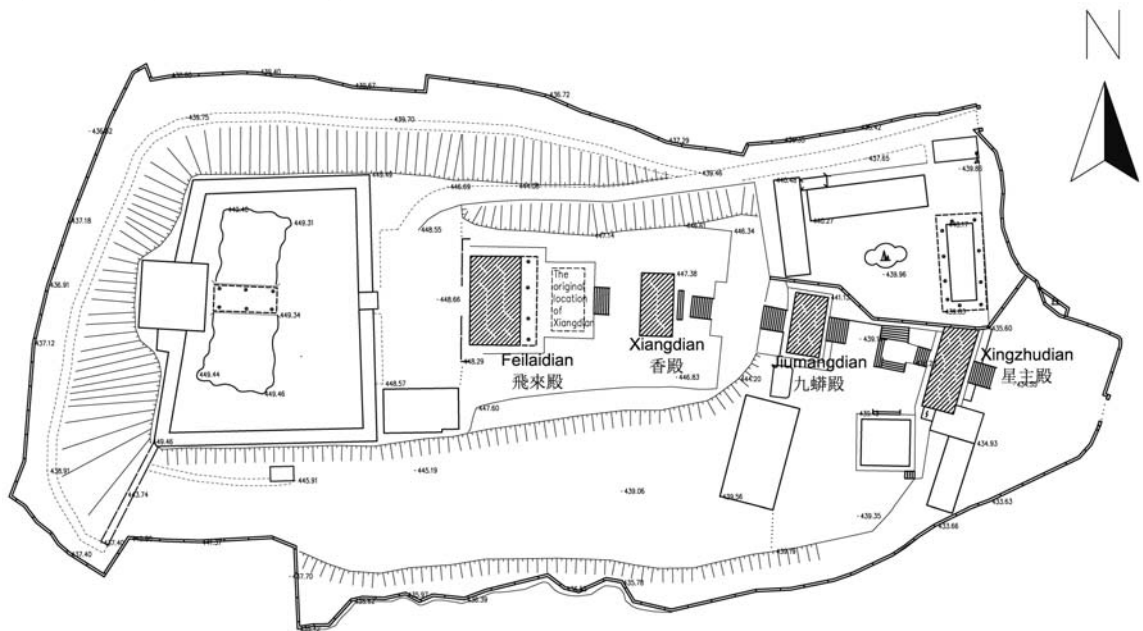


Figure 2.2b Plan of Feilaidian, Dongyuemiao

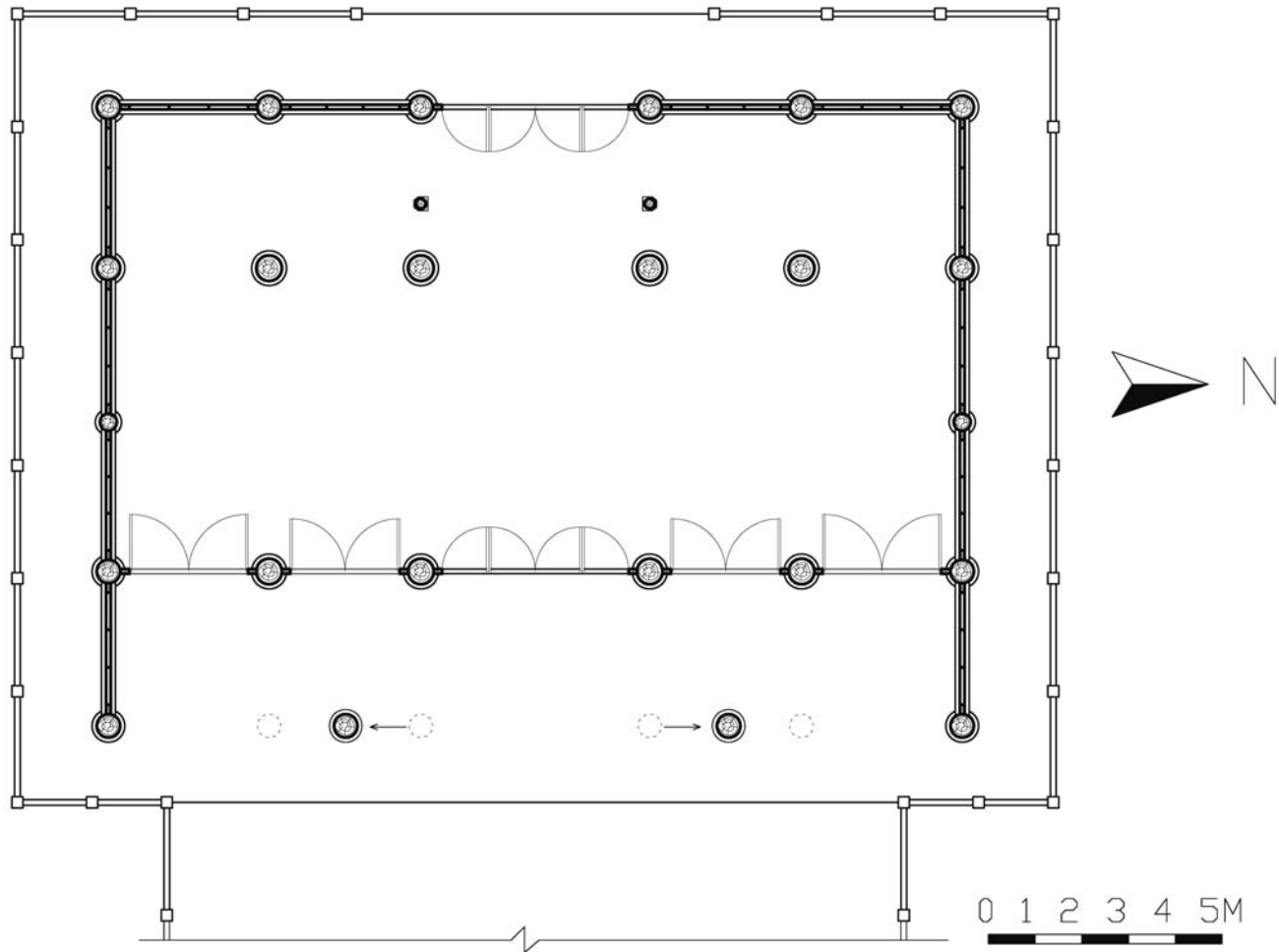


Figure 2.2c Façade of Feilaidian, Dongyuemiao

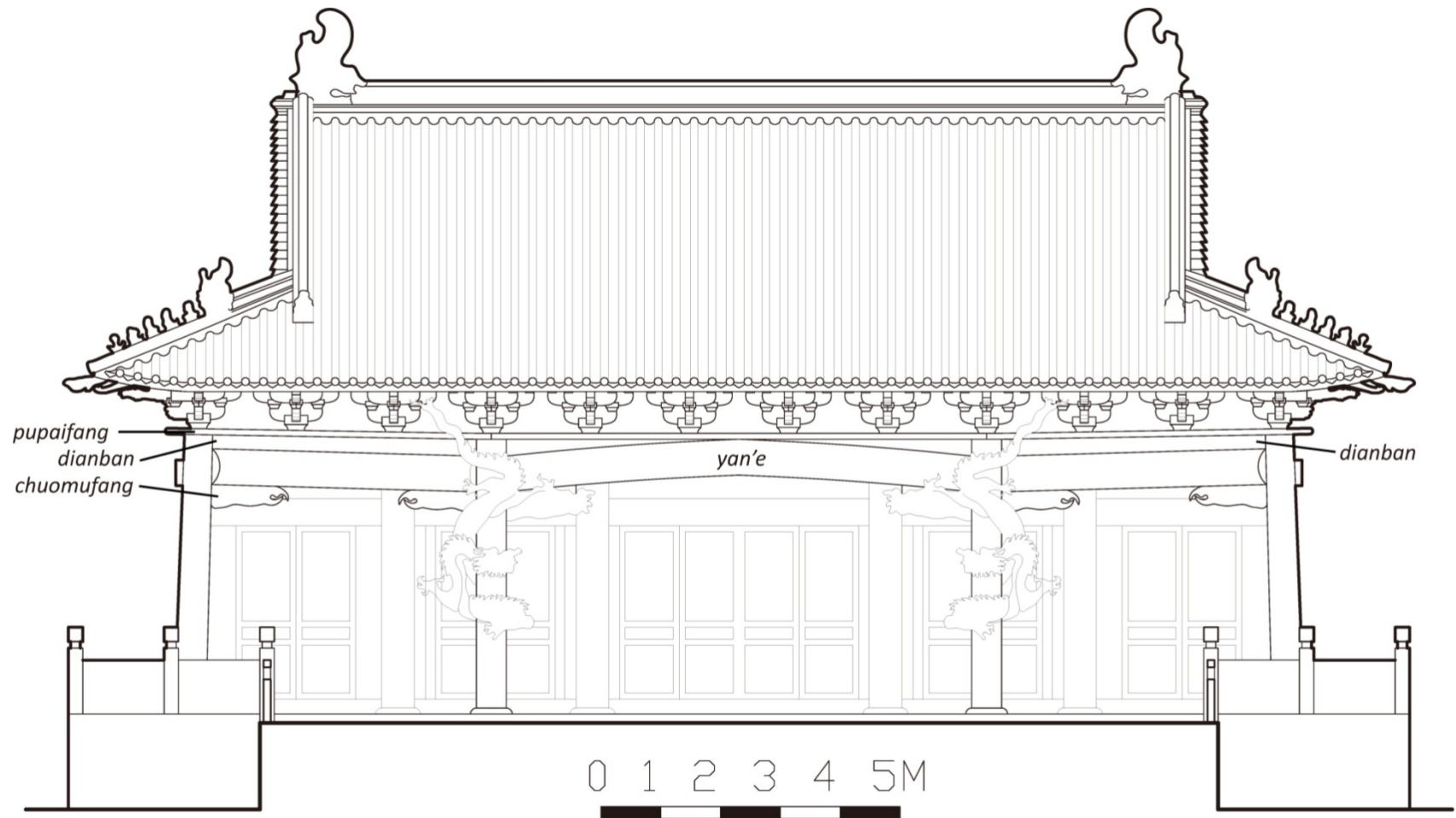
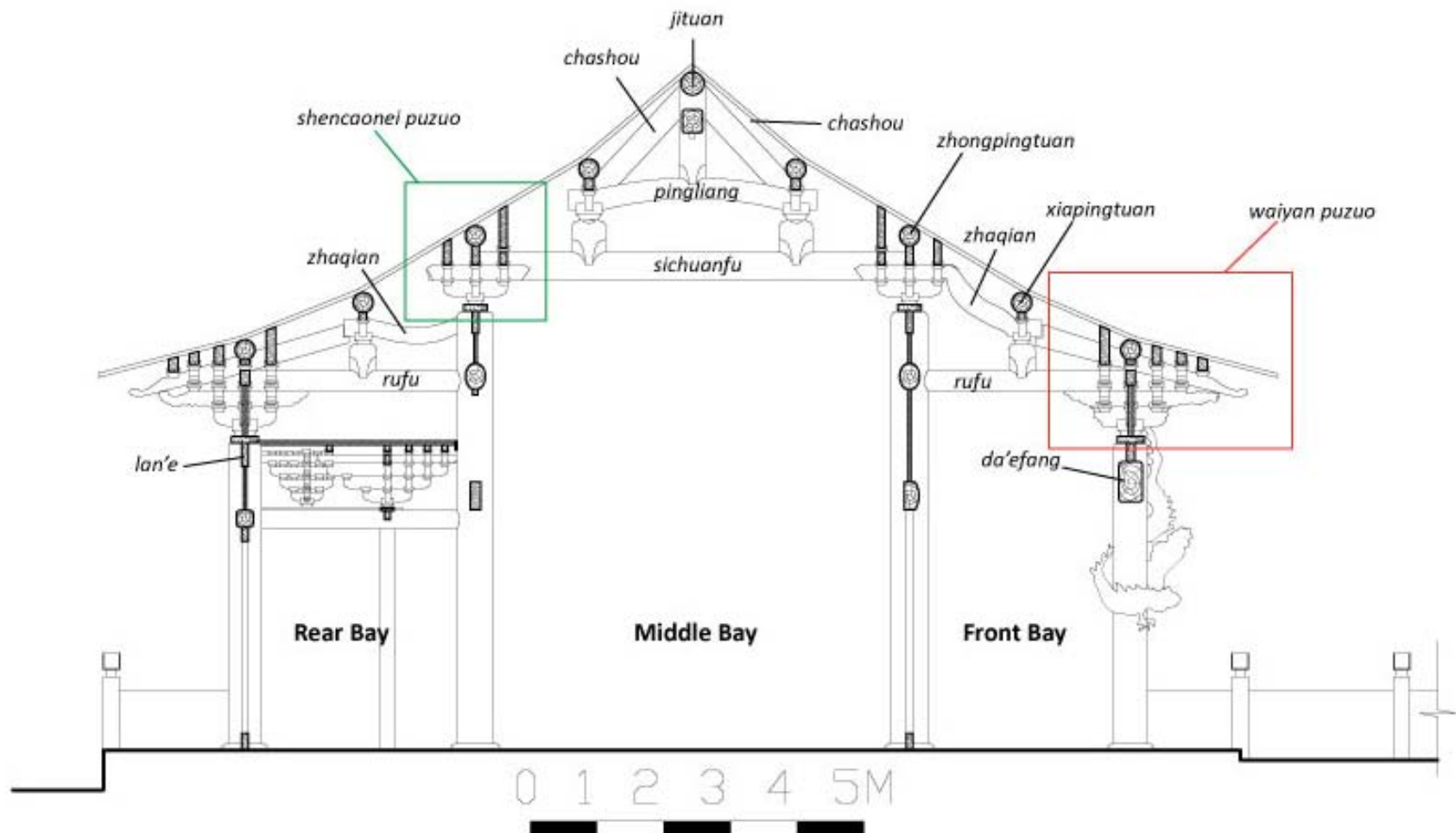


Figure 2.2d East-west Sectional View of Feilaidian, Dongyuemiao



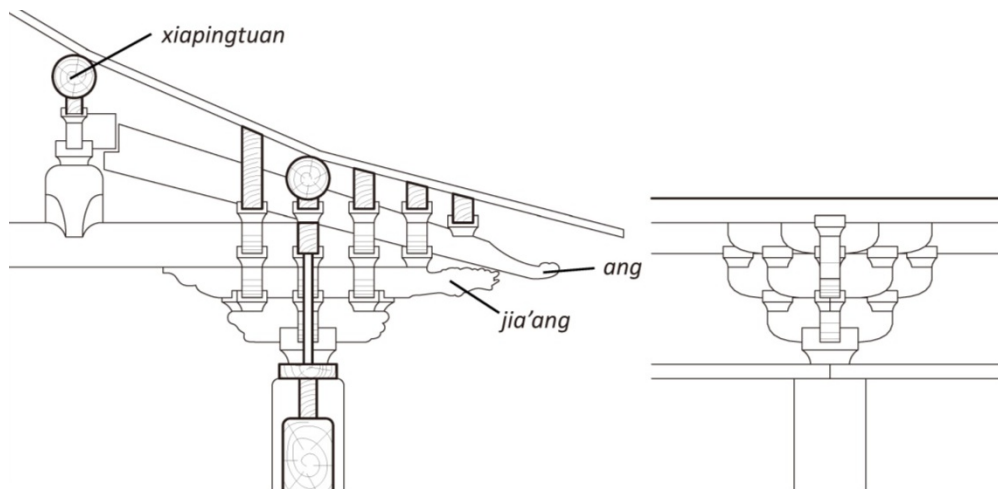


Figure 2.2e Capital Set of Waiyan Puzuo, Feilaidian, Dongyuemiao

Left:sectional view

Right:frontal view

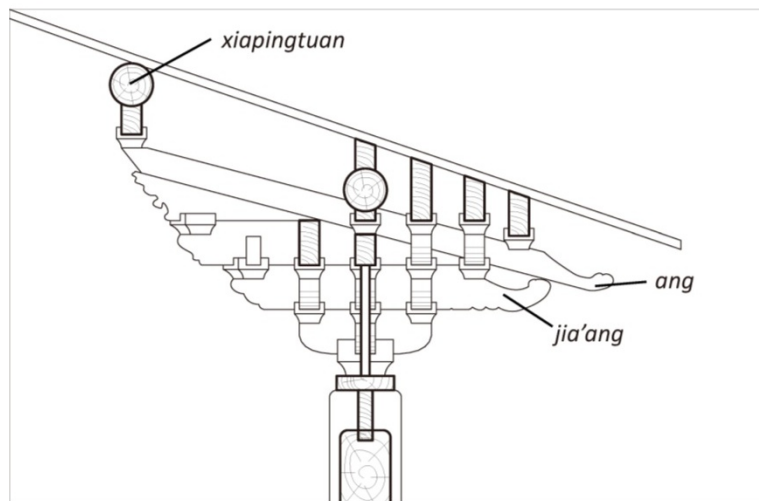


Figure 2.2f Intercolumnar set of Waiyan Puzuo, Feilaidian, Dongyuemiao

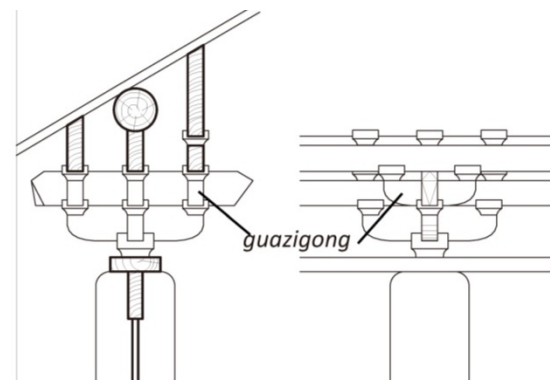


Figure 2.2g Shencaonei Puzuo of Feilaidian, Dongyuemiao

Left:sectional view

Right:frontal view

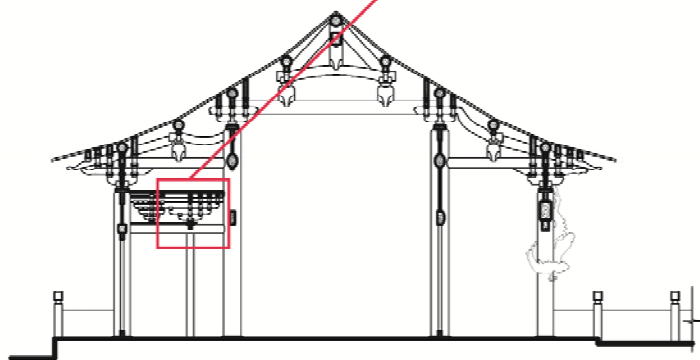
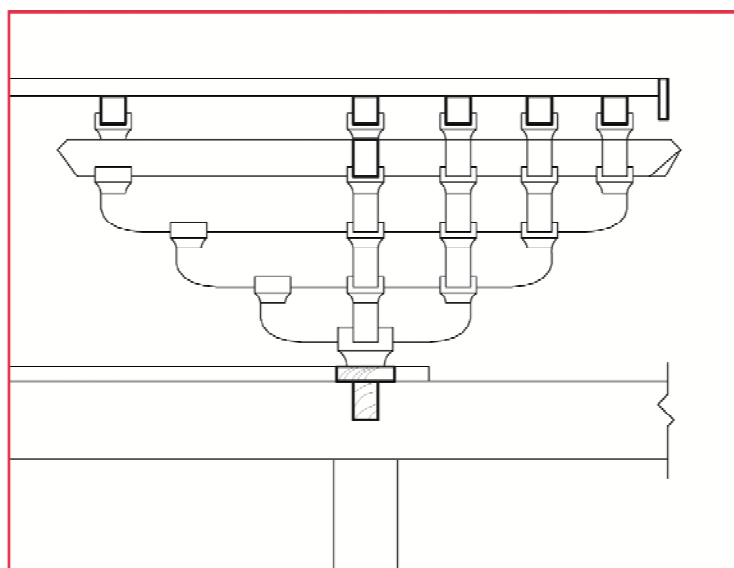
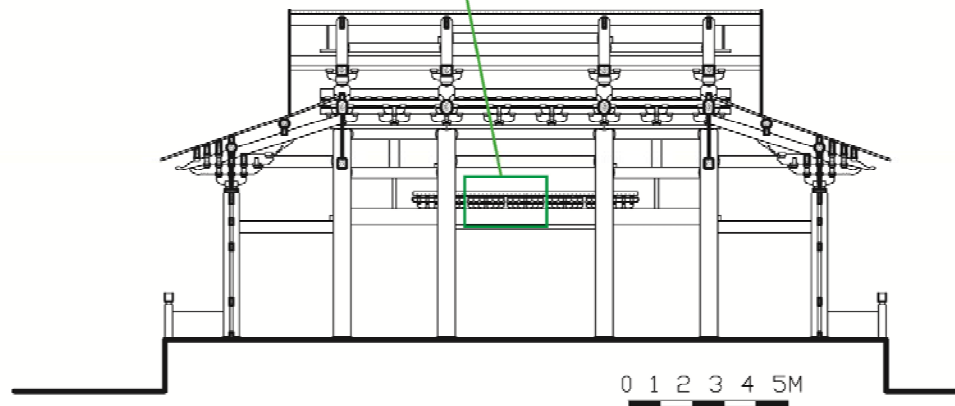
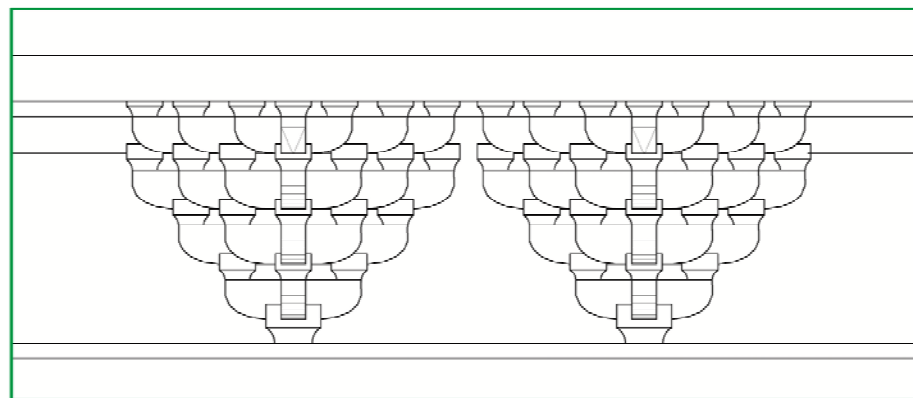


Figure 2.2h **Xiaomuzuo** of Feilaidian, Dongyuemiao
 Top left: sectional view of the bracket sets of **xiaomuzuo**
 Bottom left: east-west sectional view of Feilaidian



Top right: frontal view of the bracket sets of **xiaomuzuo**
 Bottom right: north-south sectional view of Feilaidian

Figure 2.2i Plan of Xiangdian, Dongyuemiao

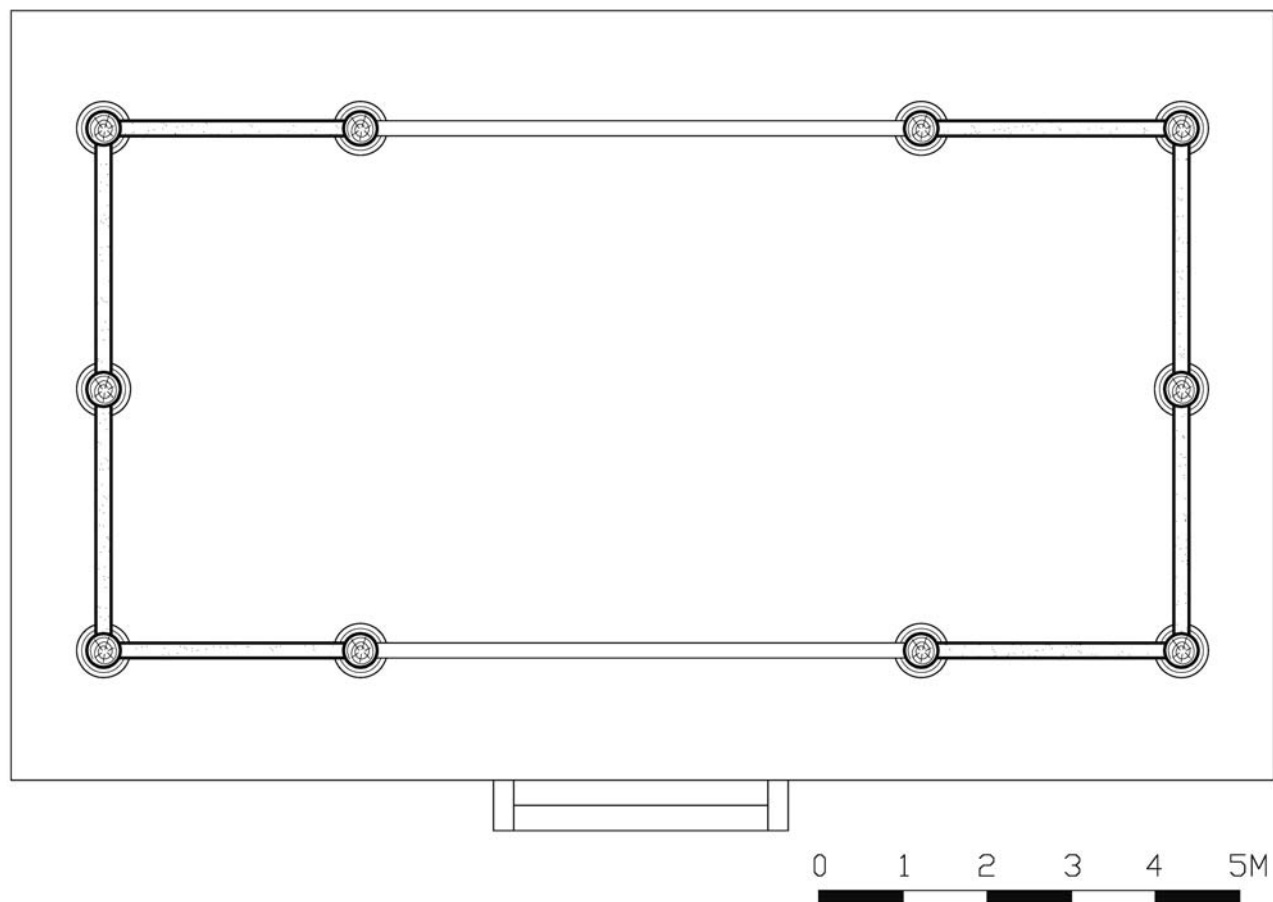
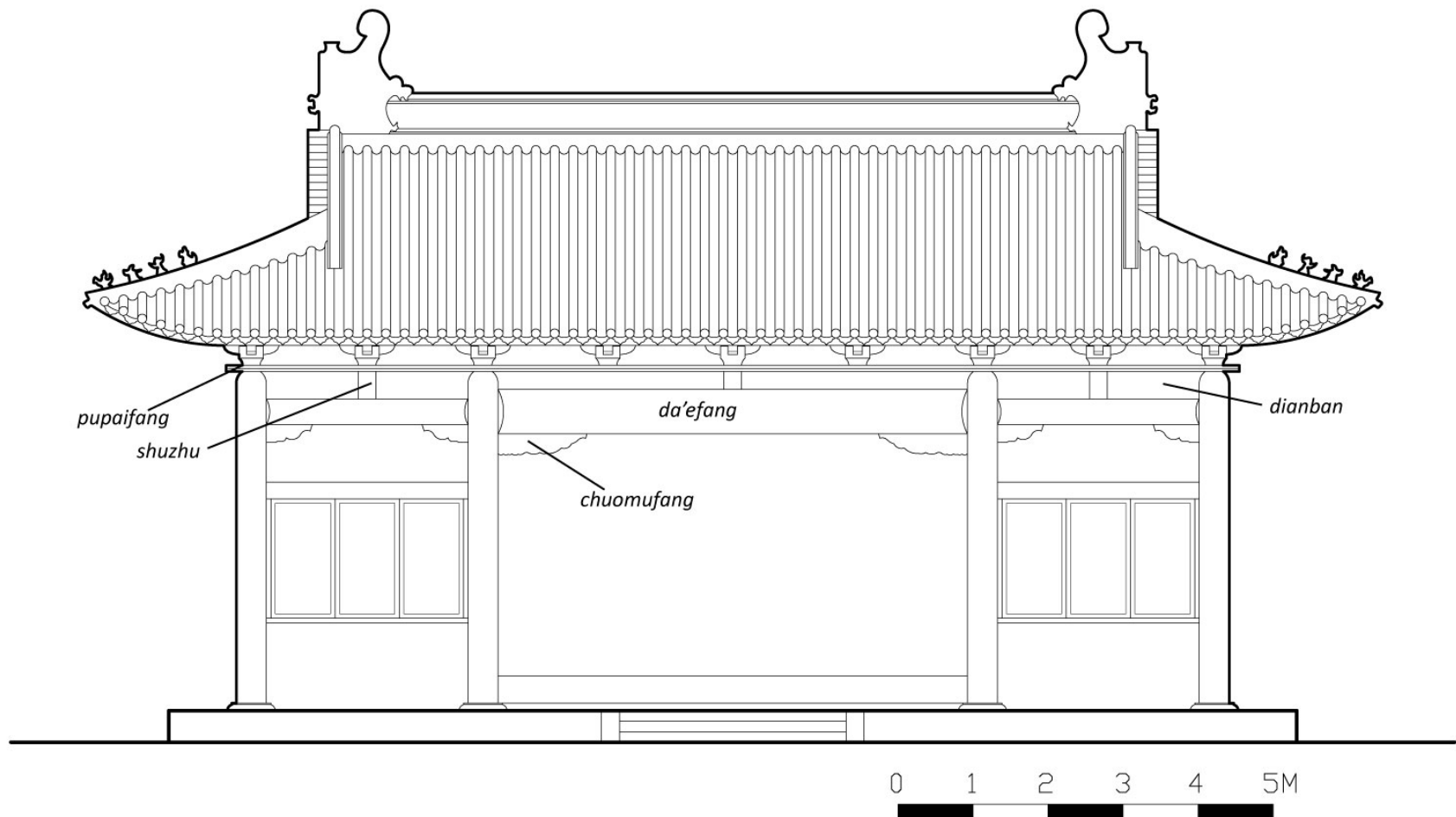


Figure 2.2j Frontal Elevation of Xiangdian, Dongyuemiao



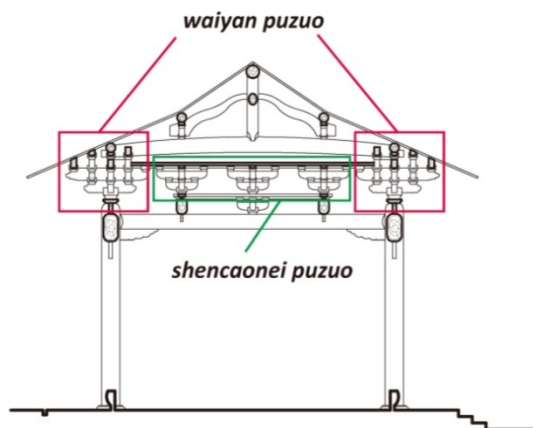


Figure 2.2k East-west Sectional View of Xiangdian, Dongyuemiao

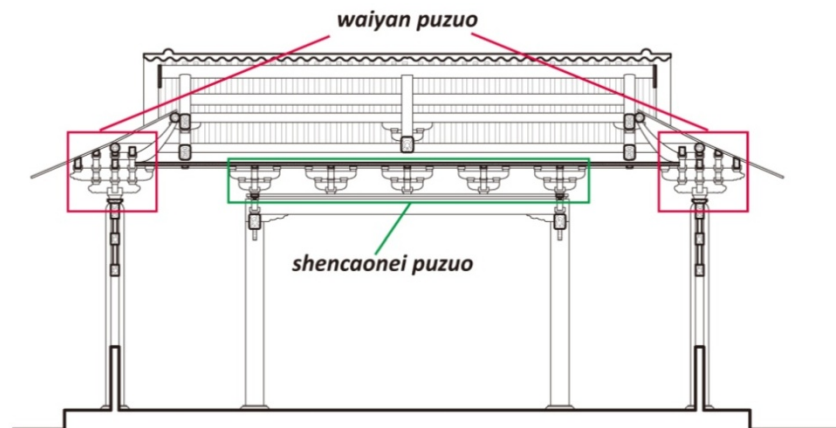


Figure 2.2l North-south Sectional View of Xiangdian, Dongyuemiao

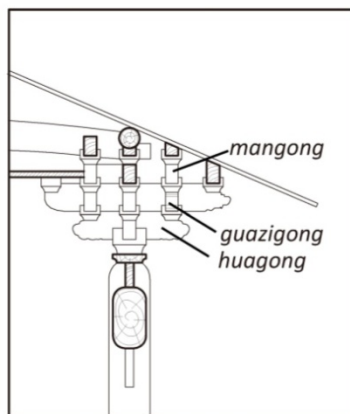


Figure 2.2m Sectional View of Waiyan Puzuo of Xiangdian, Dongyuemiao



Figure 2.2n Shencaonei Puzuo of Xiangdian, Dongyuemiao

Figure 2.2o East-west Sectional View, Xiangdian, Dongyuemiao

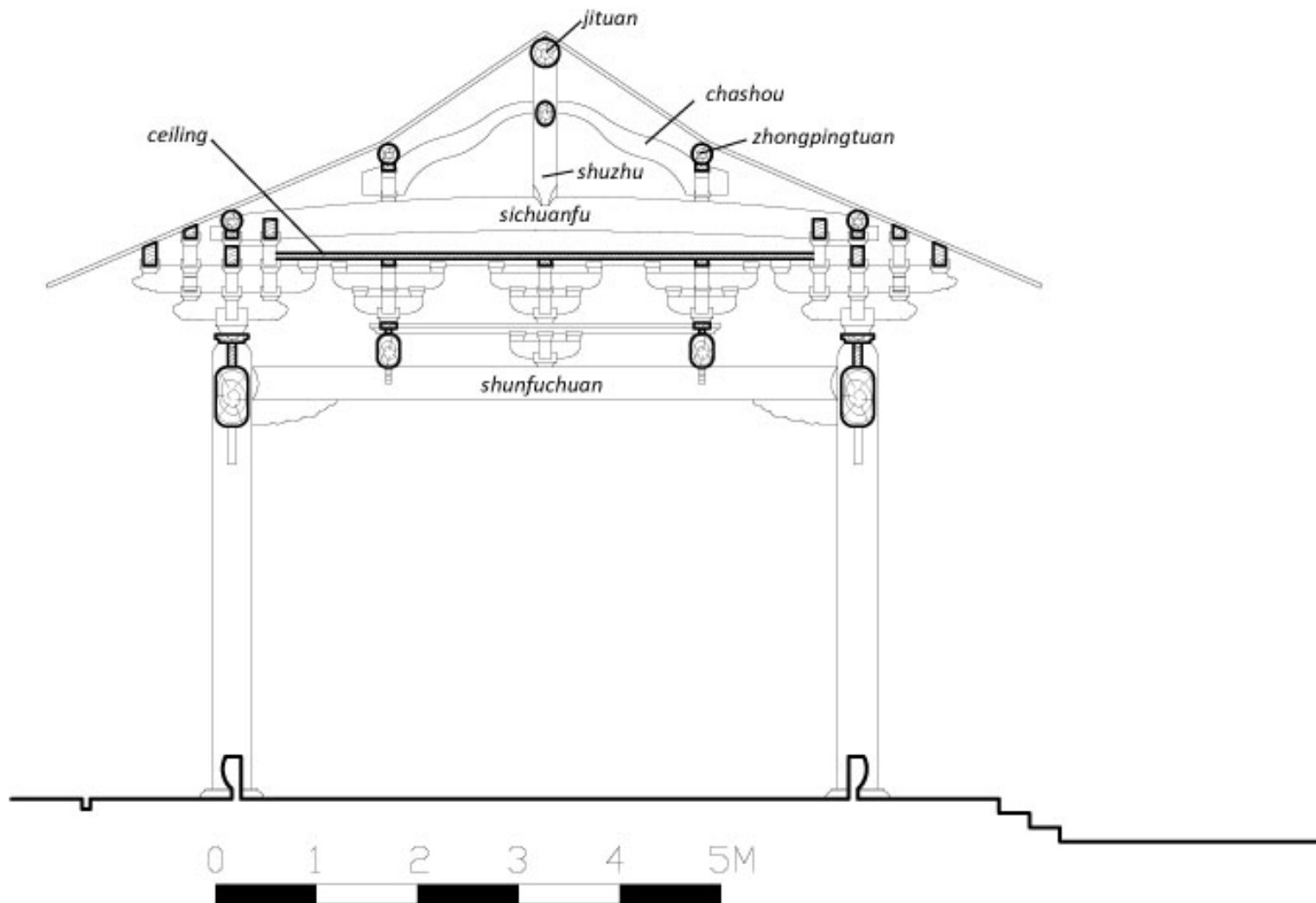


Figure 2.3a. Plan of the Main Hall, Bao'ensi

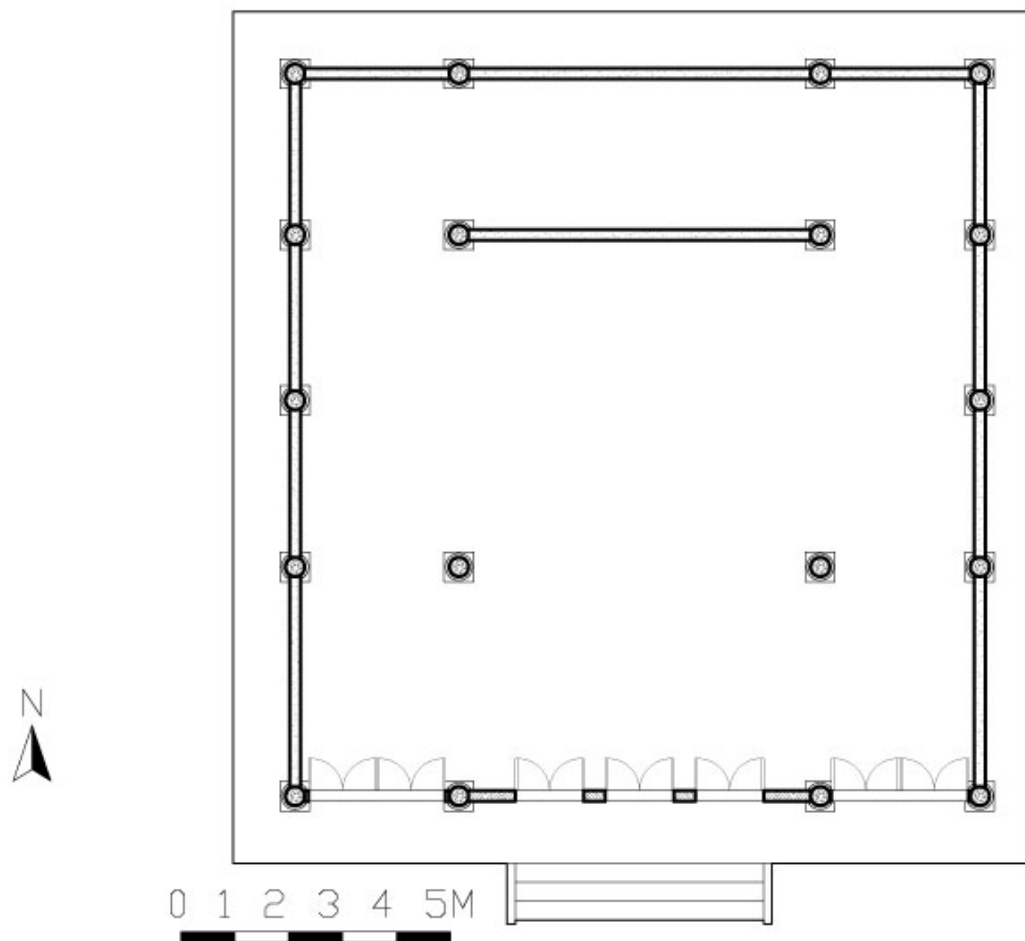




Figure 2.3b Photographs of the Main Hall, Bao'ensi

Top left: Front elevation

Top right: Rear elevation

Bottom right: West elevation

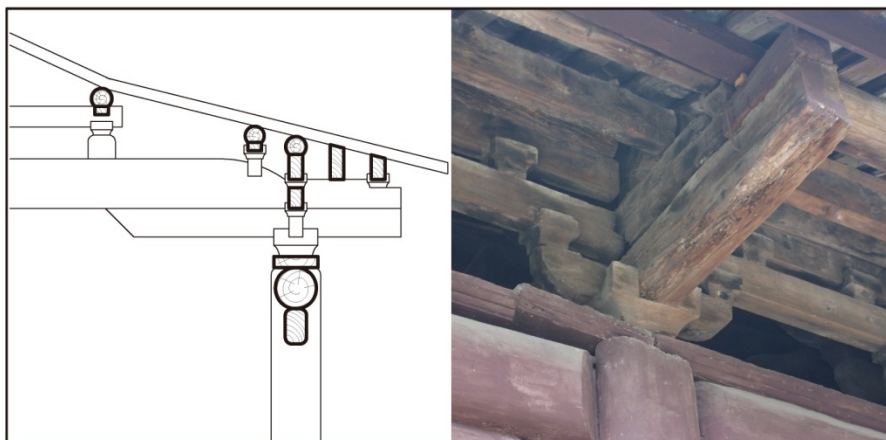


Figure 2.3c Capital Set of *waiyan puzuo*, Main Hall, Bao'ensi



Figure 2.3e Fan-shaped Intercolunlar Set of *waiyan puzuo*, Main Hall, Bao'ensi

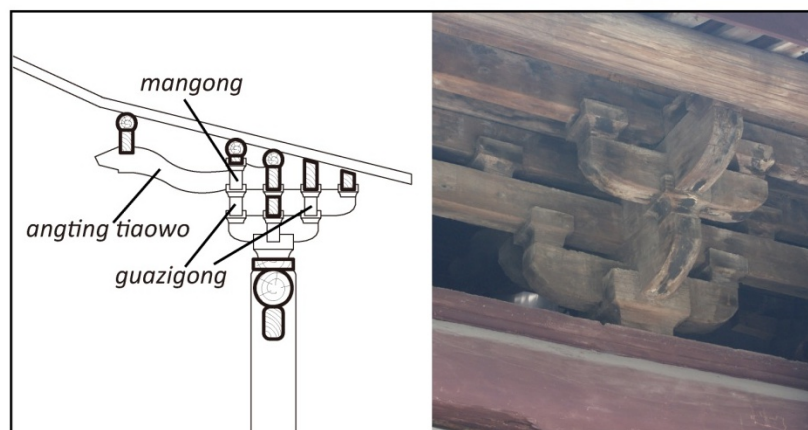


Figure 2.3d Intercolunlar Set of *waiyan puzuo*, Main Hall, Bao'ensi



Figure 2.3f Corner Bracket Set of *waiyan puzuo*, Main Hall, Bao'ensi

Figure 2.3g Sketch of the North-south section, Main Hall, Bao'ensi

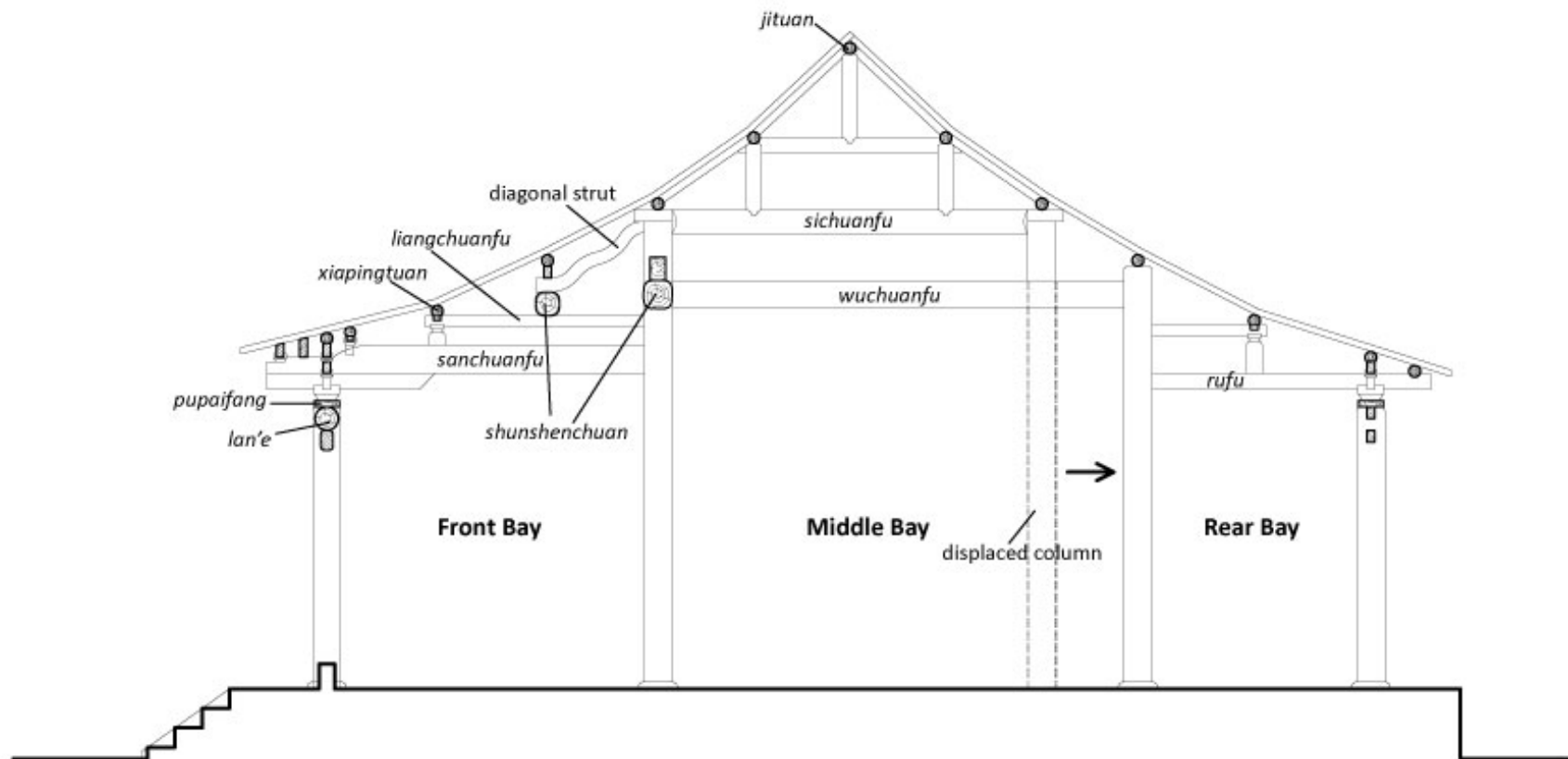


Figure 2.4a Layout of Yong'ansi

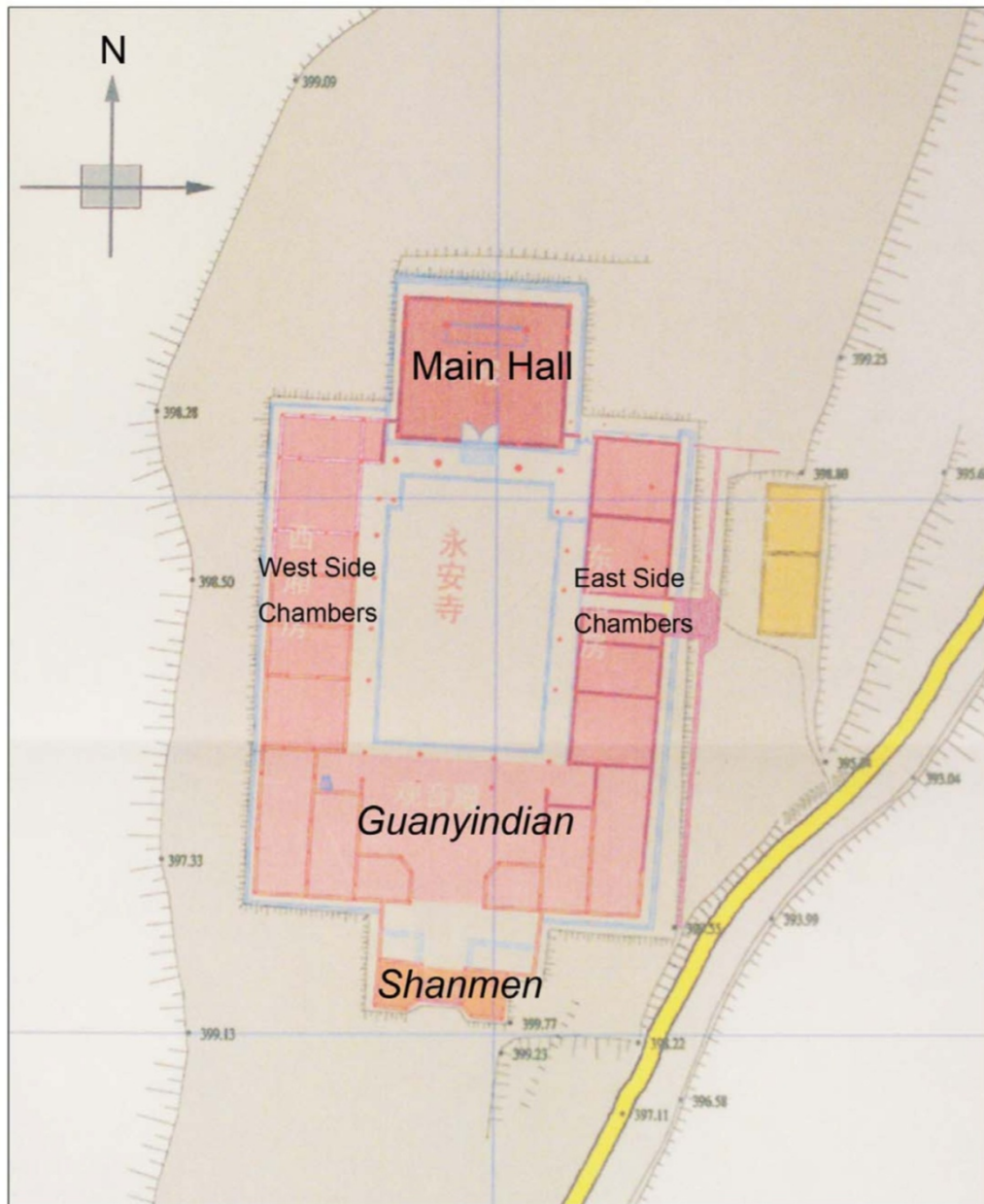


Figure 2.4b. Vestige of the ink inscription on the beam in the Main Hall of Yong'ansi.

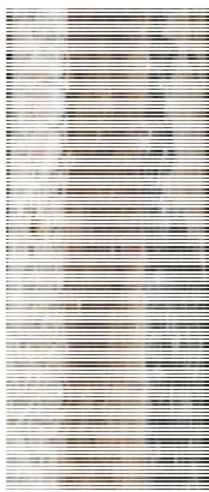


Figure 2.4c Plan of the Main Hall, Yong'ansi

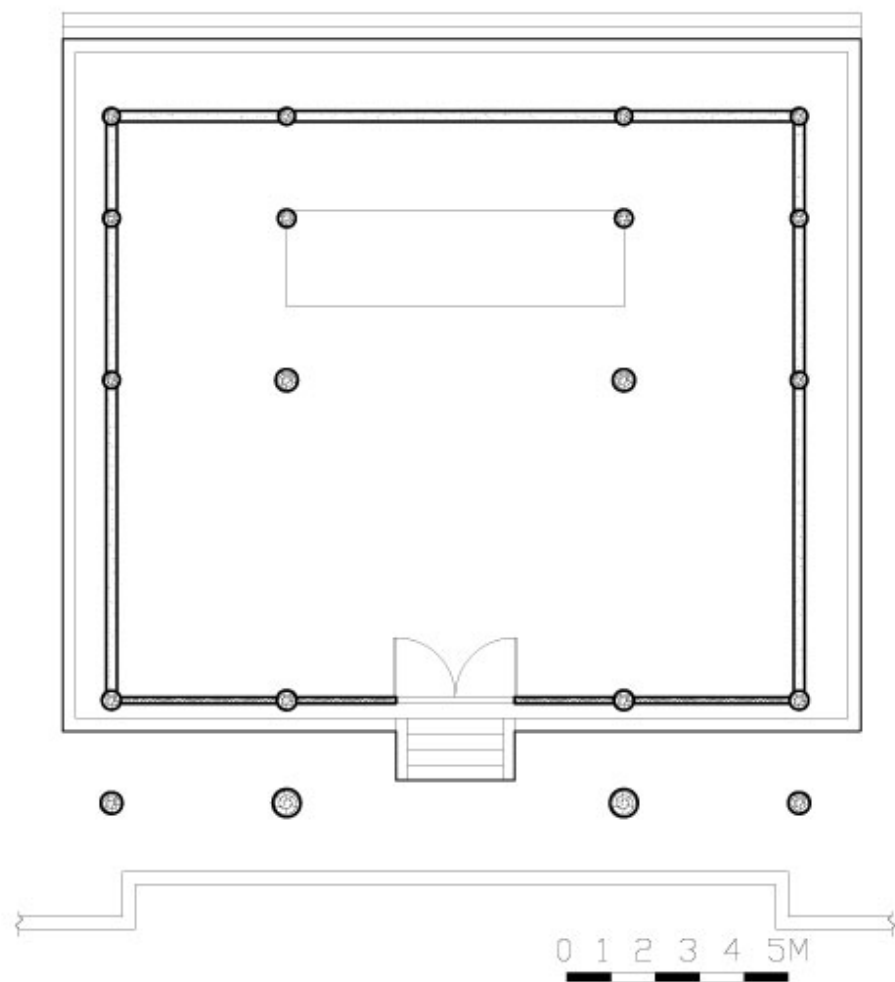


Figure 2.4d Front elevation of the Main Hall of Yong'ansi

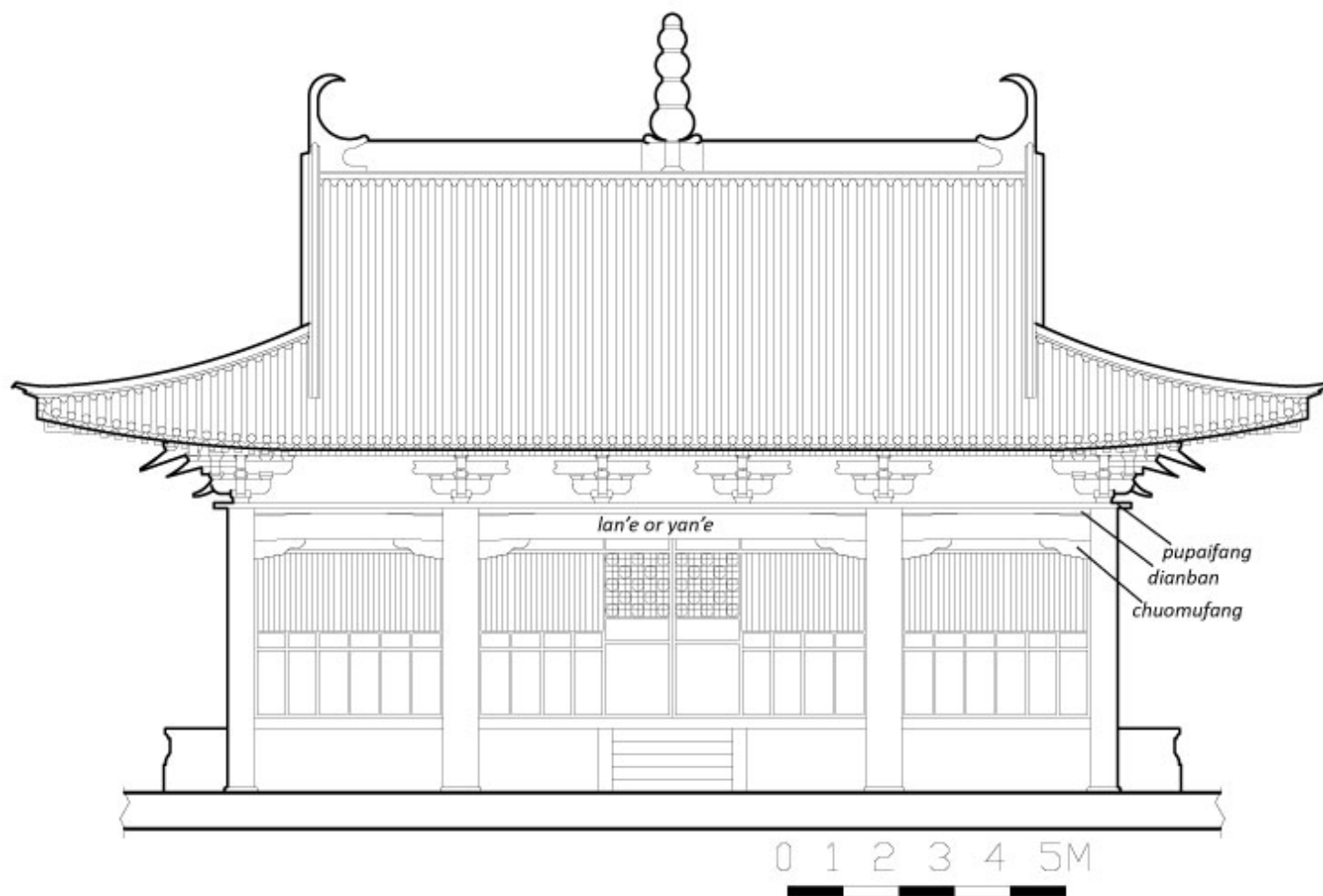




Figure 2.4e Capital Sets and Inter-columnar Sets in the *Mingjian* on the facade, Main Hall, Yong'ansi



Figure 2.4f Capital Set, Main Hall, Yong'ansi

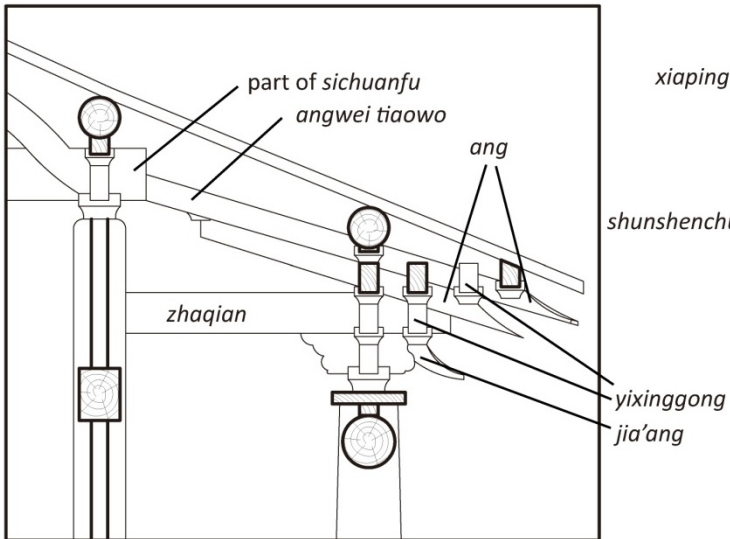


Figure 2.4g Sectional View of the Capital Set, Main Hall, Yong'ansi



Figure 2.4h Bracket sets between *Shunshenchuan* and *Xiapingtuan*, Main Hall, Yong'ansi

Figure 2.4i North-south Sectional View of the Main Hall, Yong'ansi

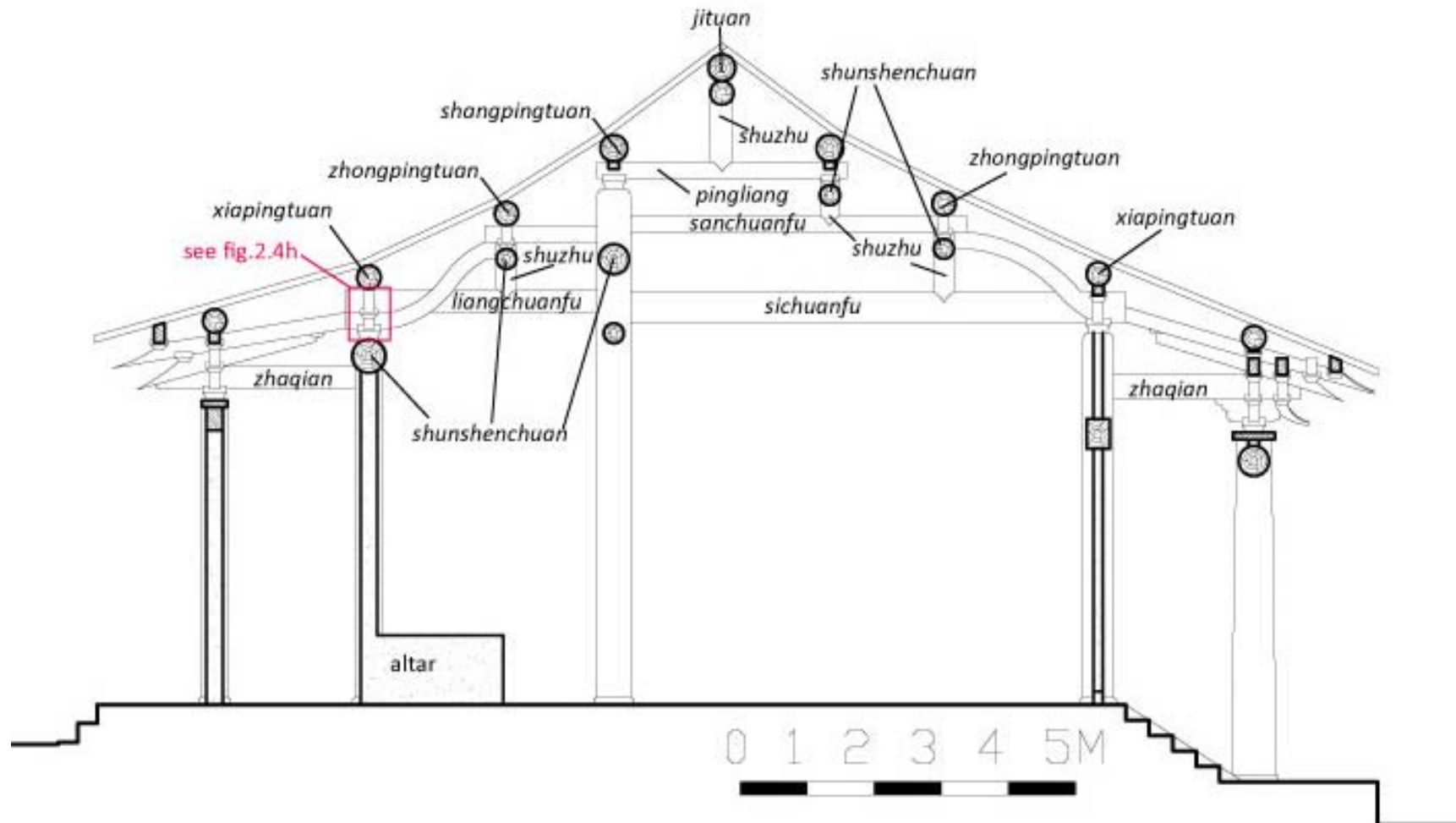
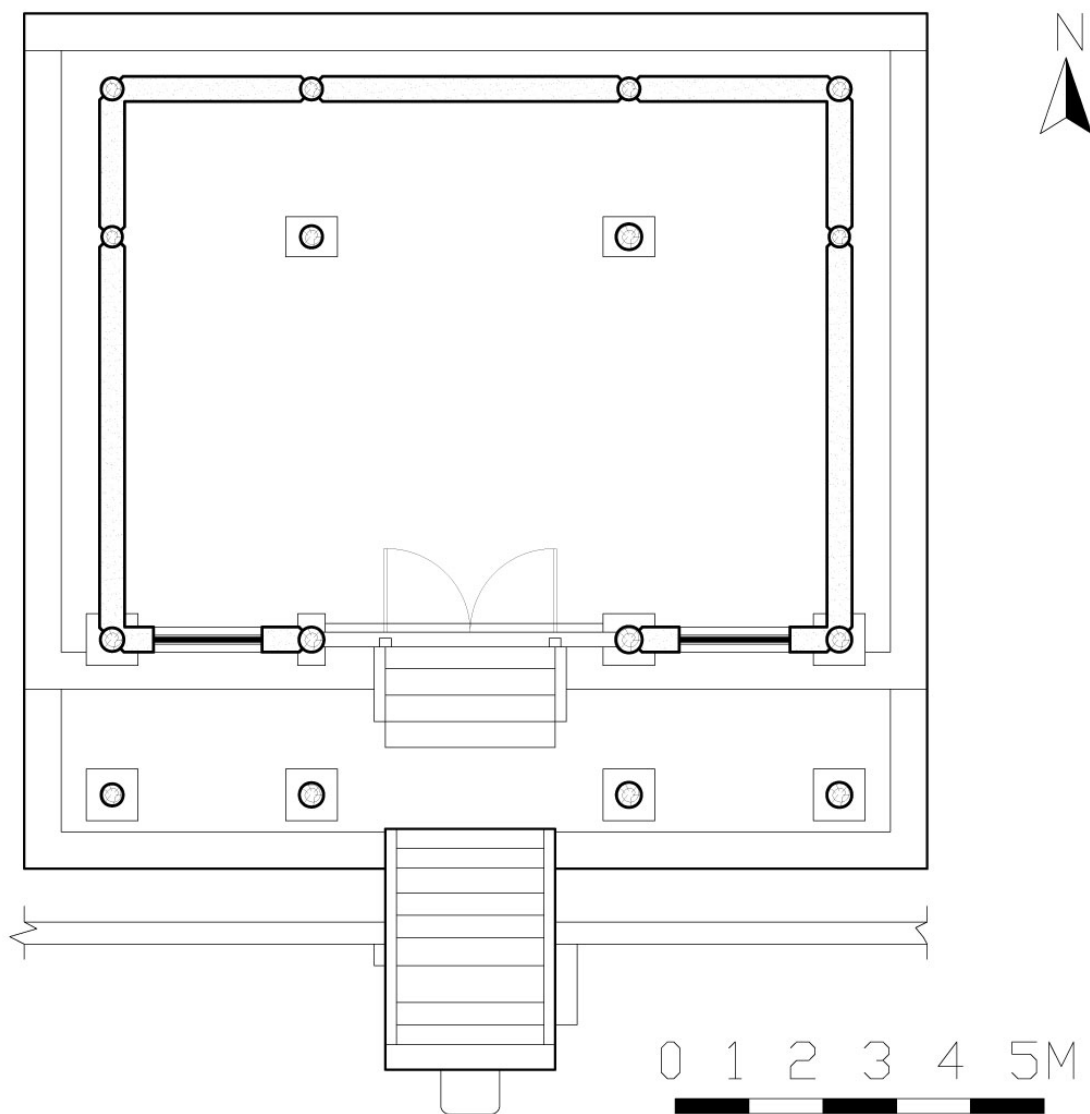


Figure 2.5a Plan of Wenchangdian, Wulongmiao



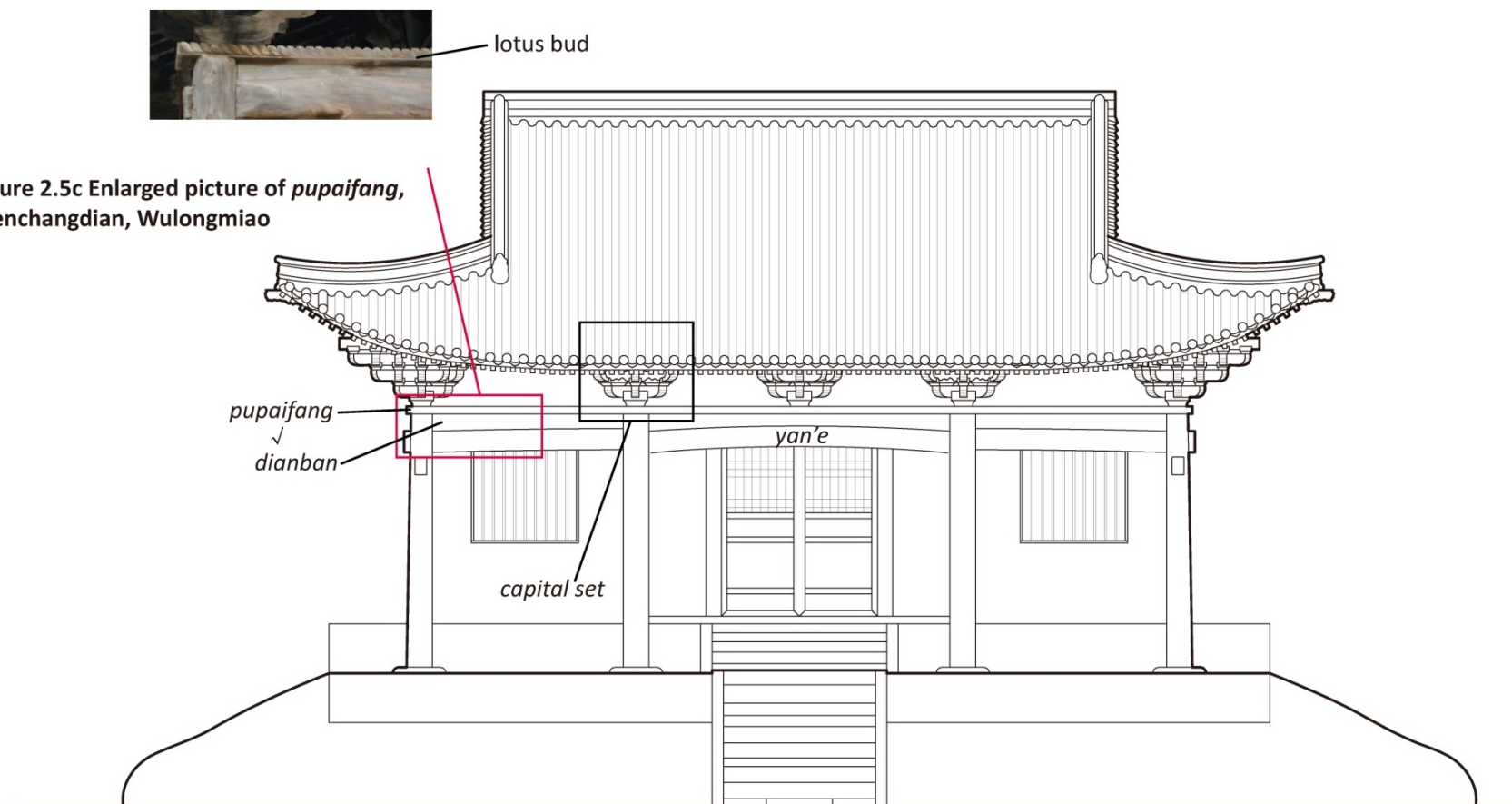


Figure 2.5c Enlarged picture of *pupaifang*,
Wenchangdian, Wulongmiao

Figure 2.5b Facade of Wenchangdian, Wulongmiao

0 1 2 3 4 5m



Figure 2.5d Corner set, Wenchangdian, Wulongmiao



Figure 2.5e Rear view of the intercolumnar set, Wenchangdian, Wulongmiao

angting tiaowo
triangle wedge

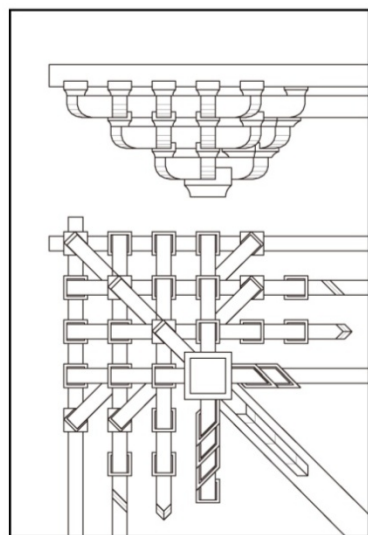


Figure 2.5f Front view (top) and bottom view(bottom) of the corner set, Wenchangdian, Wulongmiao

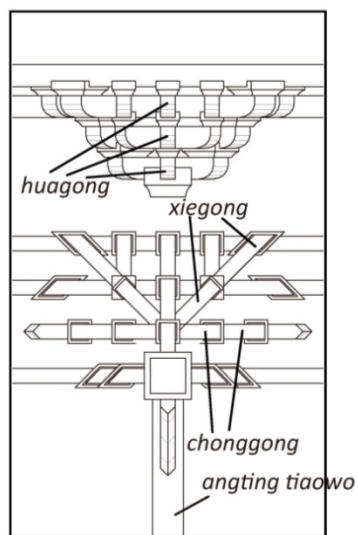


Figure 2.5g Front view (top) and bottom view(bottom) of the intercolumnar set, Wenchangdian, Wulongmiao

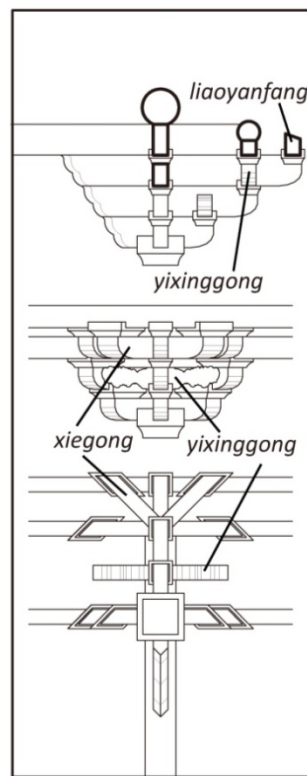


Figure 2.5h Sectional view(top), front view (middle) and bottom view(bottom) of the corner set, Wenchangdian, Wulongmiao



Figure 2.5i Picture of the capital set, Wenchangdian, Wulongmiao

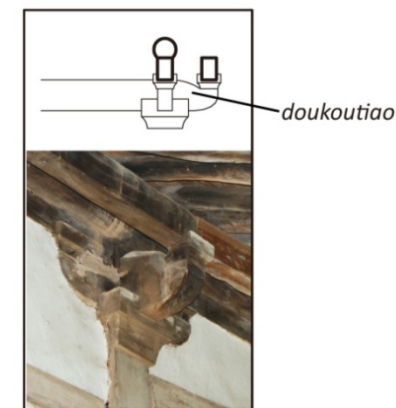


Figure 2.5j Sectional view(top) and picture(bottom) of the capital set on the east side, Wenchangdian, Wulongmiao.

doukoutiao



Figure 2.5l Front view of *shunshenchuan*

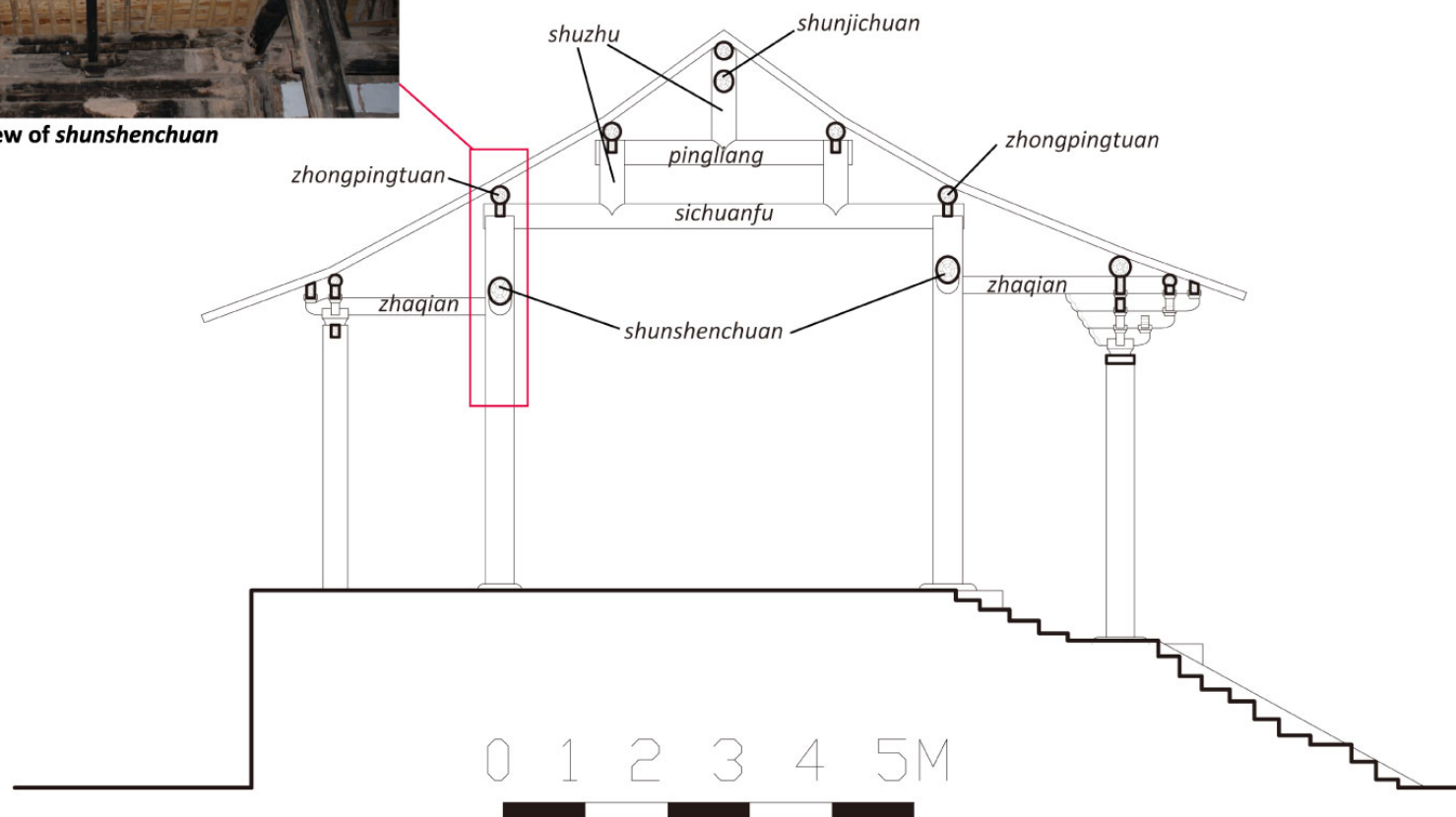


Figure 2.5k Sketch of the north-south sectional view of Wenchangdian, Wulongmiao

Figure 2.6a Plan of the Main Hall, Qinglongsi

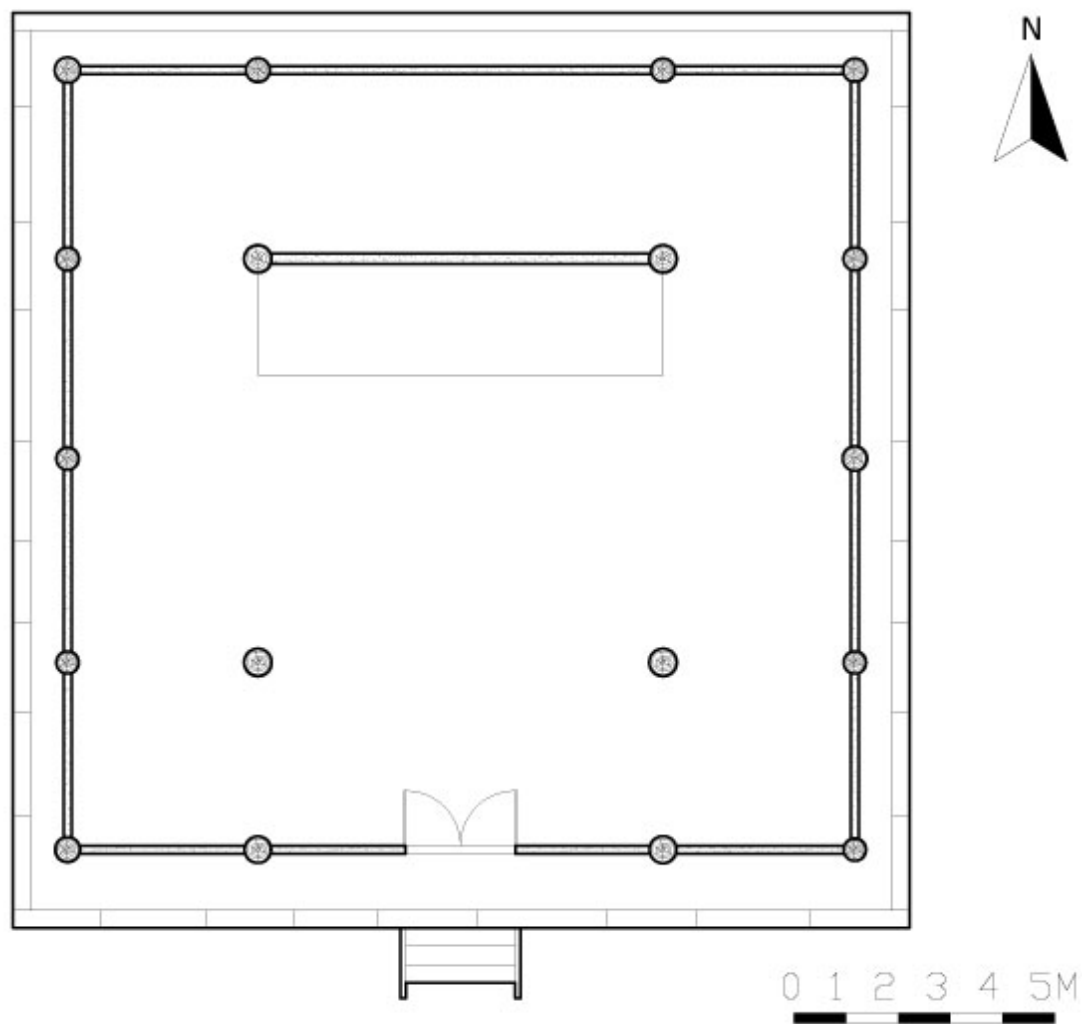


Figure 2.6b Front elevation of the Main Hall of Qinglongsi

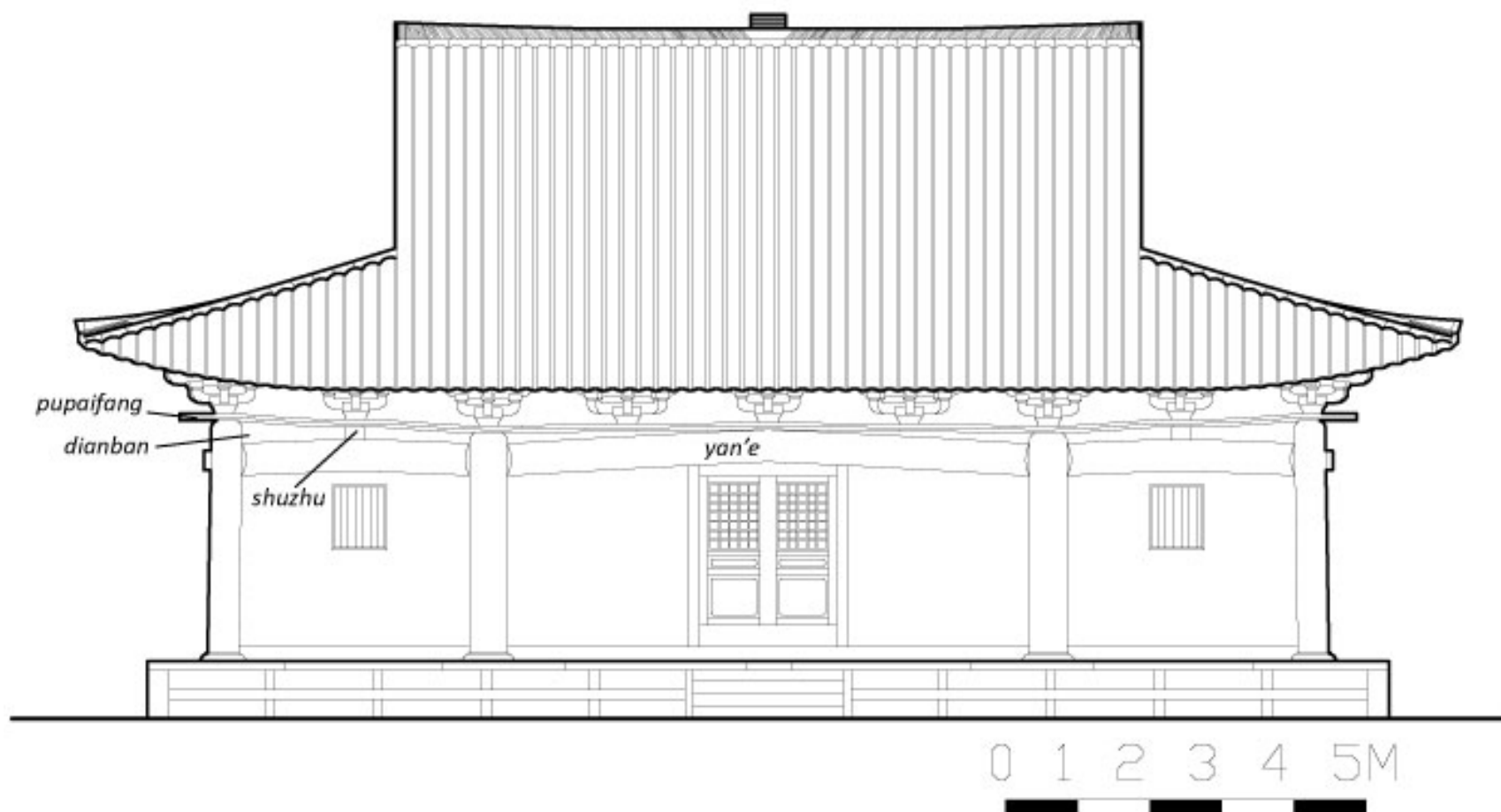


Figure 2.6c Intercolumnar sets in the *mingjian*, Main Hall, Qinglongsi

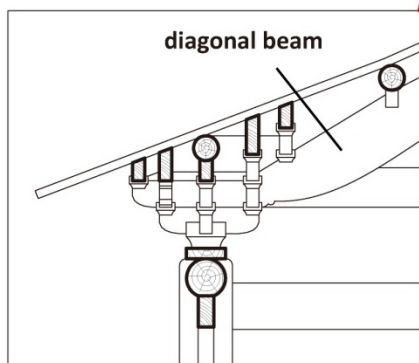
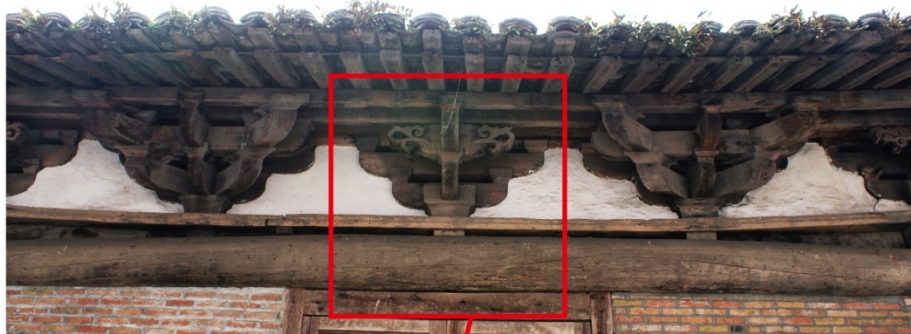


Figure 2.6e Sectional view of the middle intercolumnar set in the *mingjian*, Main Hall, Qinglongsi



Figure 2.6f Picture of the capital set on the facade, Main Hall, Qinglongsi



Figure 2.6d Corner set and intercolumnar set in the *cijian*, Main Hall, Qinglongsi

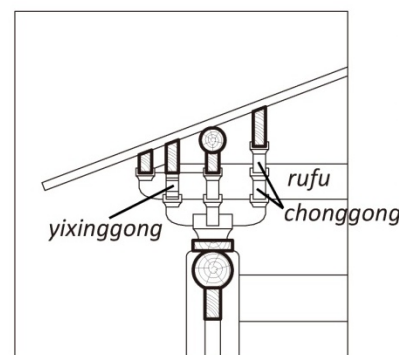


Figure 2.6g Sectional view of the capital set on the facade, Main Hall, Qinglongsi

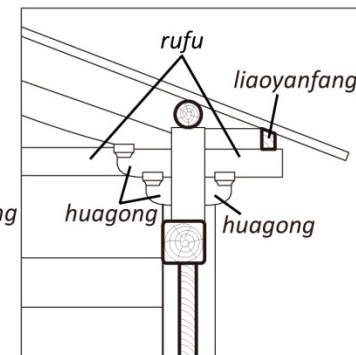


Figure 2.6h Sectional view of the capital set on the rear side, Main Hall, Qinglongsi

Figure 2.6i North-south sectional view of the Main Hall, Qinglongsi

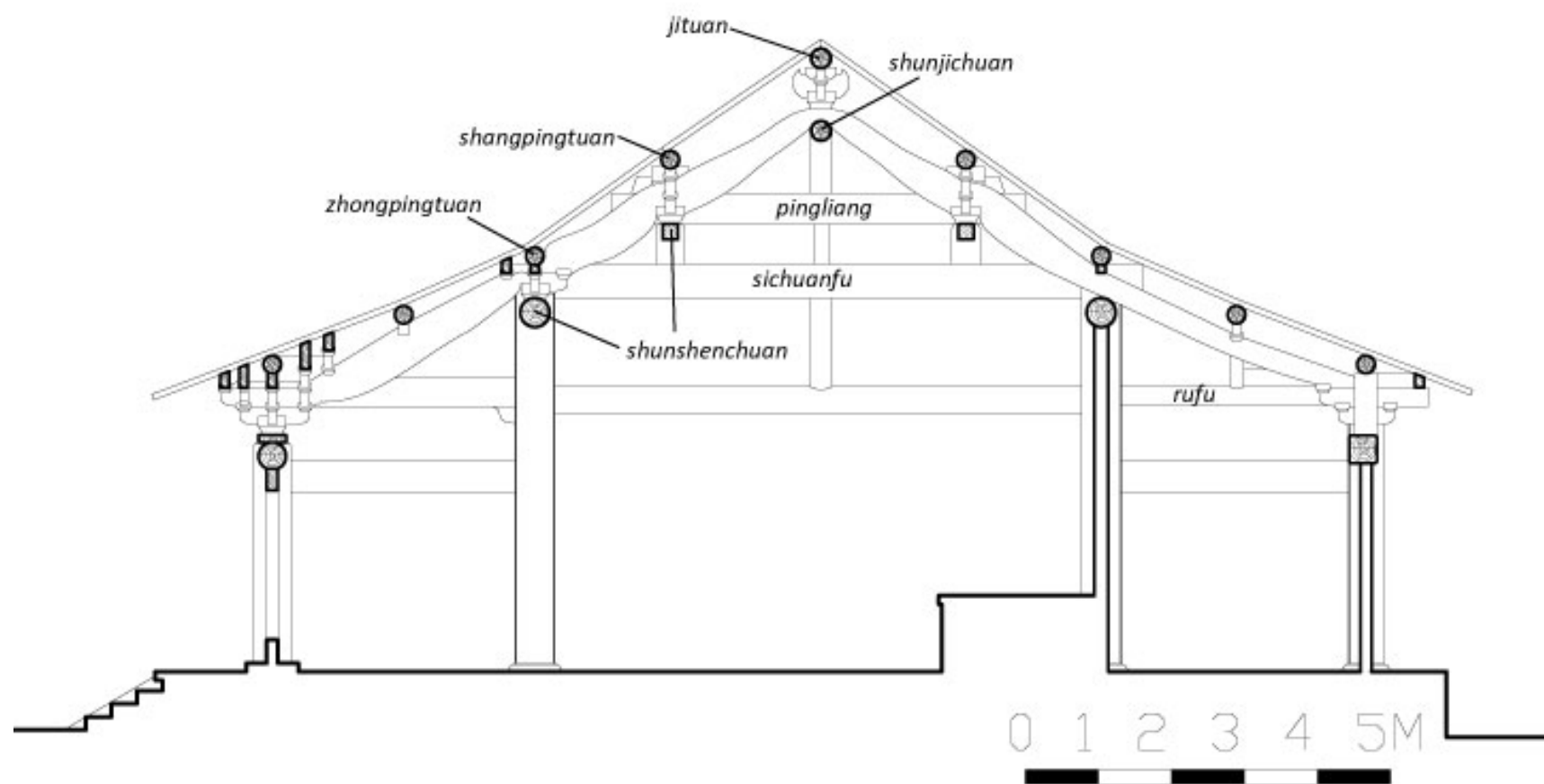


Figure 2.6j East-west sectional view of the Main Hall, Qinglongsi

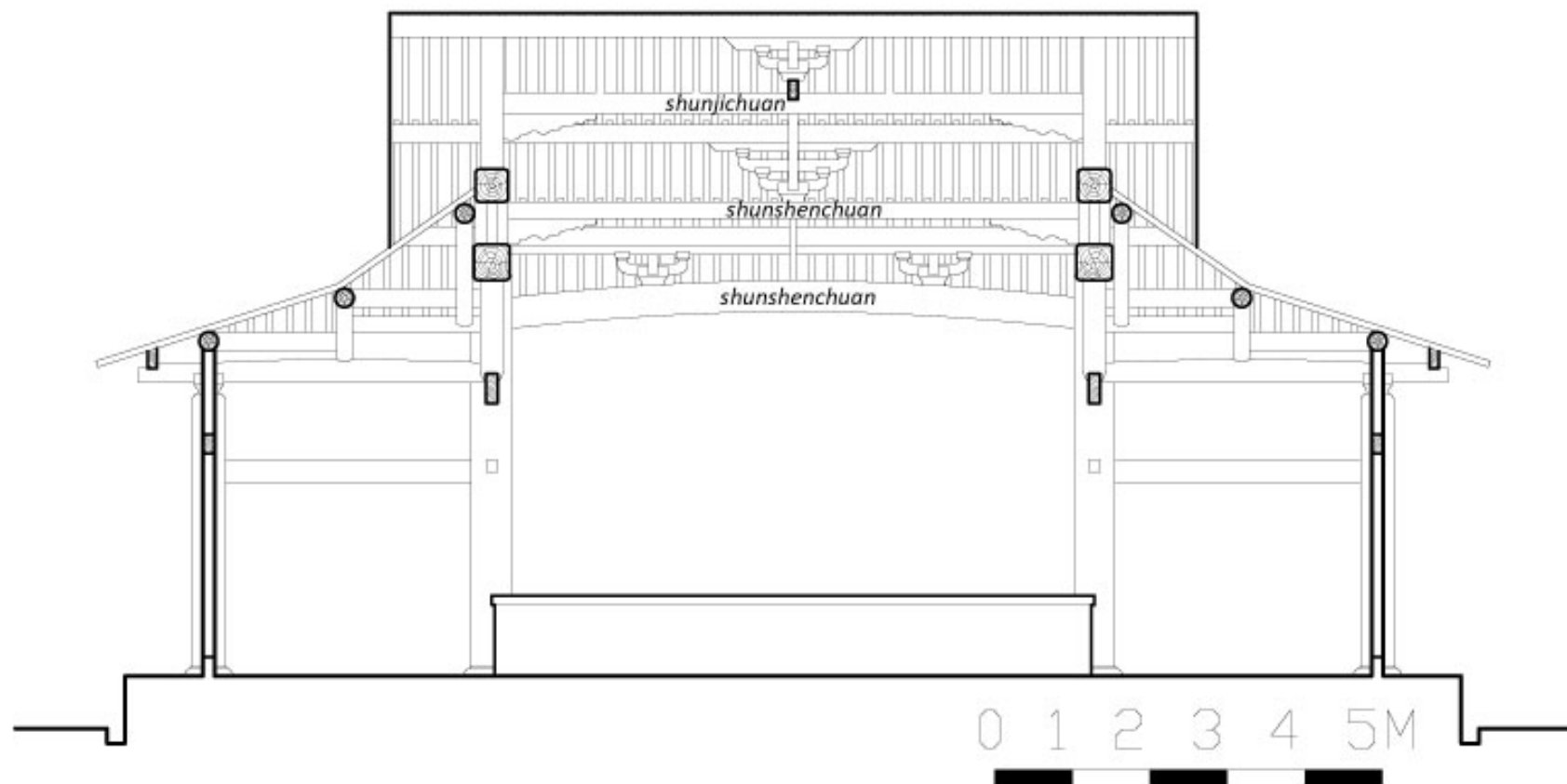
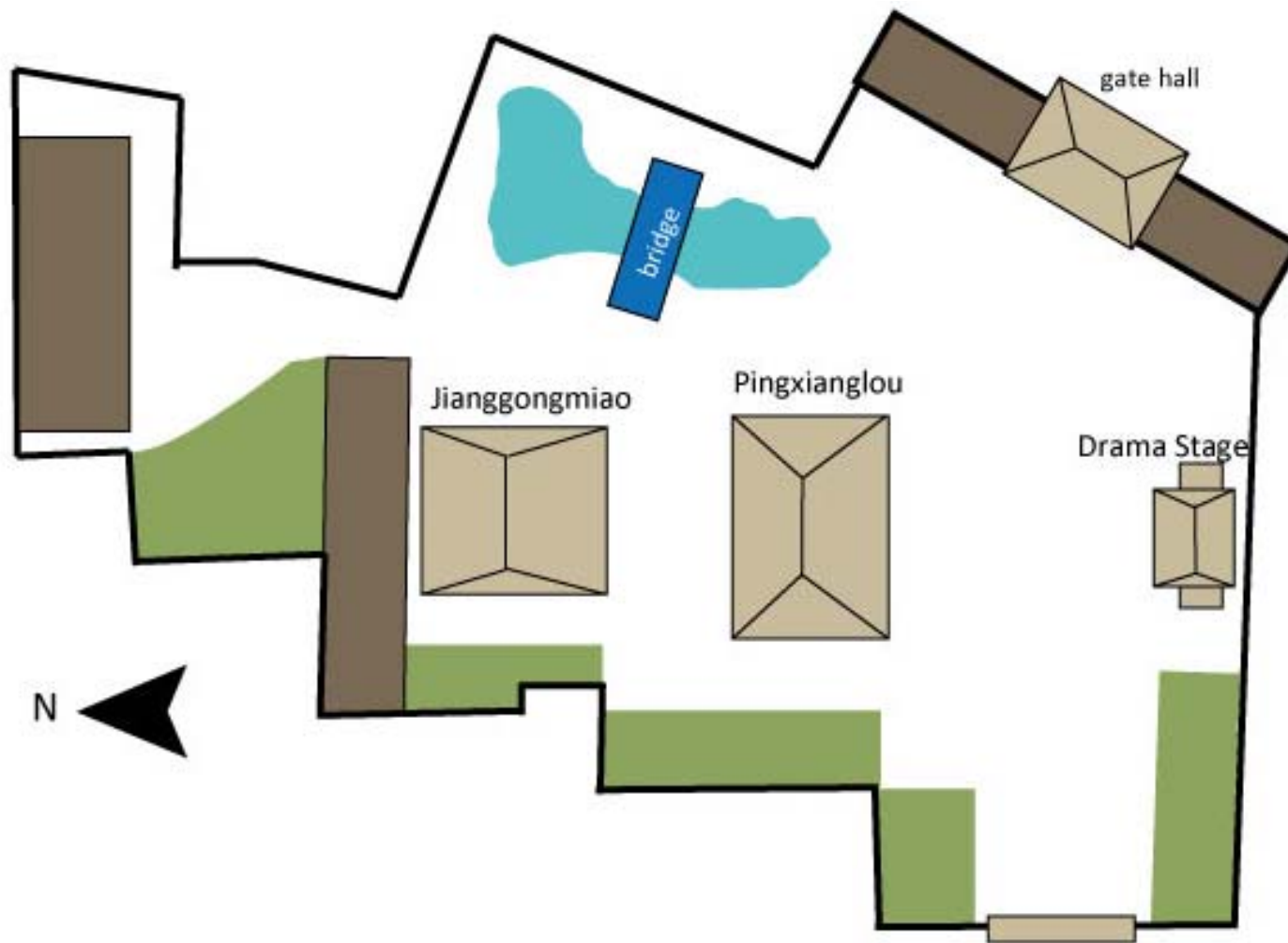


Figure 2.7a Layout of Jianghouci, Lushan, Sichuan



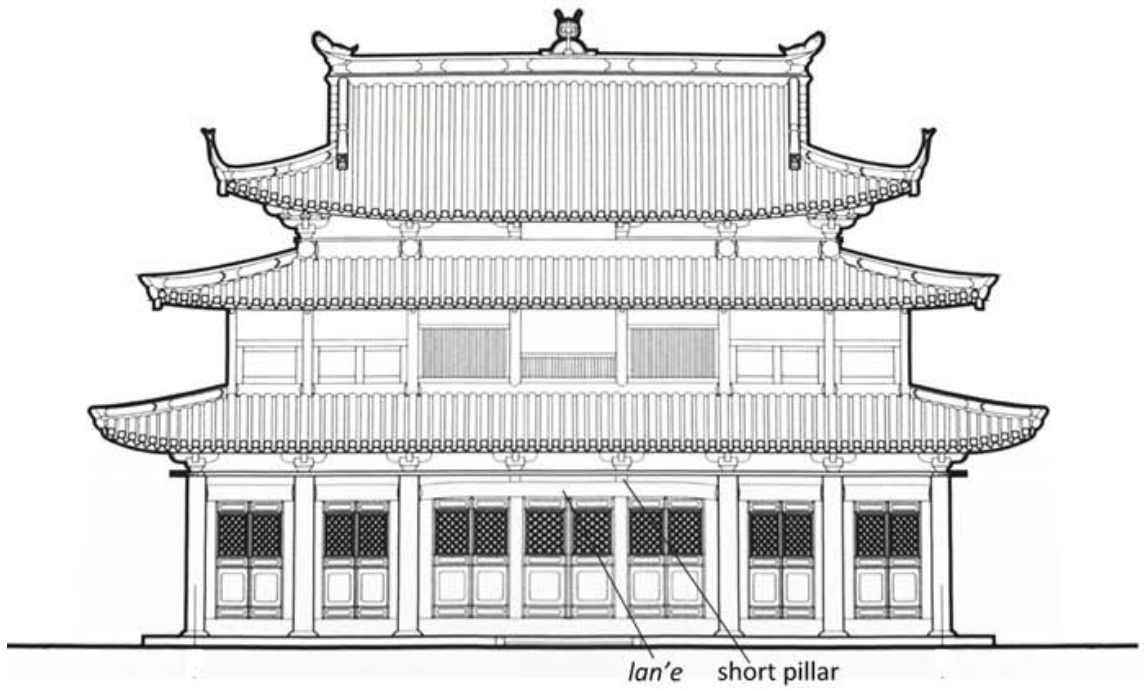


Figure 2.7b Front elevation of Pingxianglou, Lushan



Figure 2.7c Picture of the front elevation of of Pingxianglou, Lushan

Figure 2.7d Plan of the ground floor, Pingxianglou, Lushan

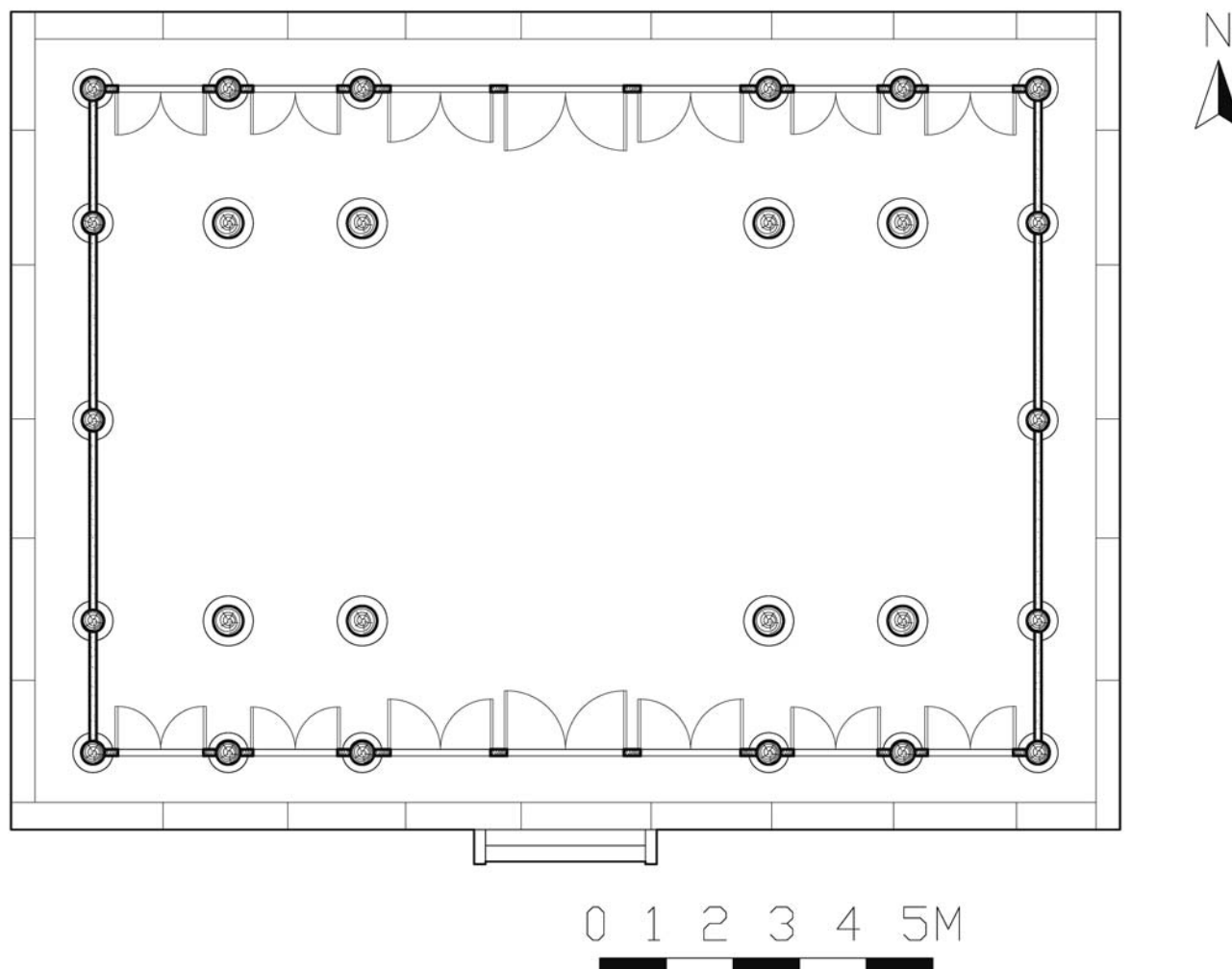




Figure 2.7e Picture of a capital set, Pingxianglou.



Figure 2.7f Picture of an intercolumnar set(left) and a capital set(right) from inside, Pingxianglou



Figure 2.7g Picture of an intercolumnar set, Pingxianglou

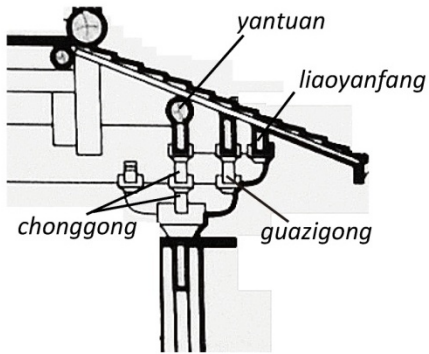


Figure 2.7h Sectional view of a capital set, Pingxianglou

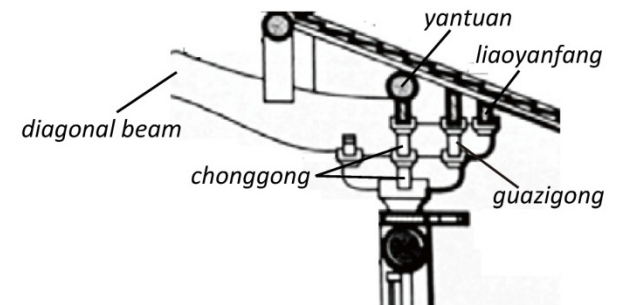


Figure 2.7i Sectional view of an intercolumnar set, Pingxianglou

[illegible]



Figure 2.7l Balcony, Pingxianglou



Figure 2.7m Shunshenchuan and the bracket set atop, Pingxianglou

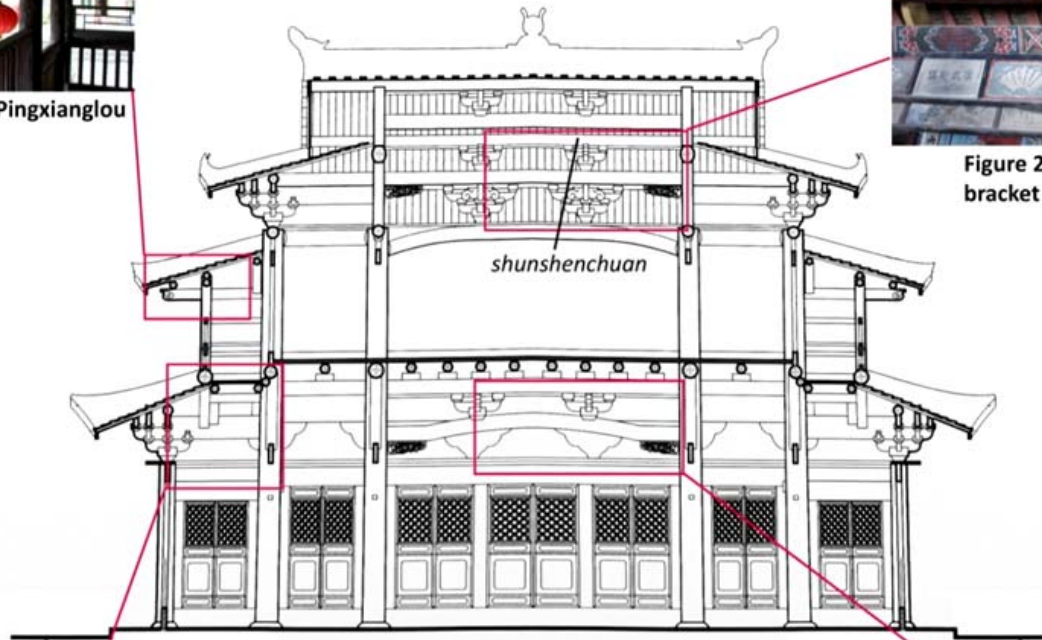


Figure 2.7k East-west sectional view of Pingxianglou



Figure 2.7n Two-rafter beam connecting the interior column to the eave column of the side, Pingxianglou



Figure 2.7o Curved traversal tie beam and the bracket set atop,

Figure 2.8a Layout of Qiqushan damiao, Zitong

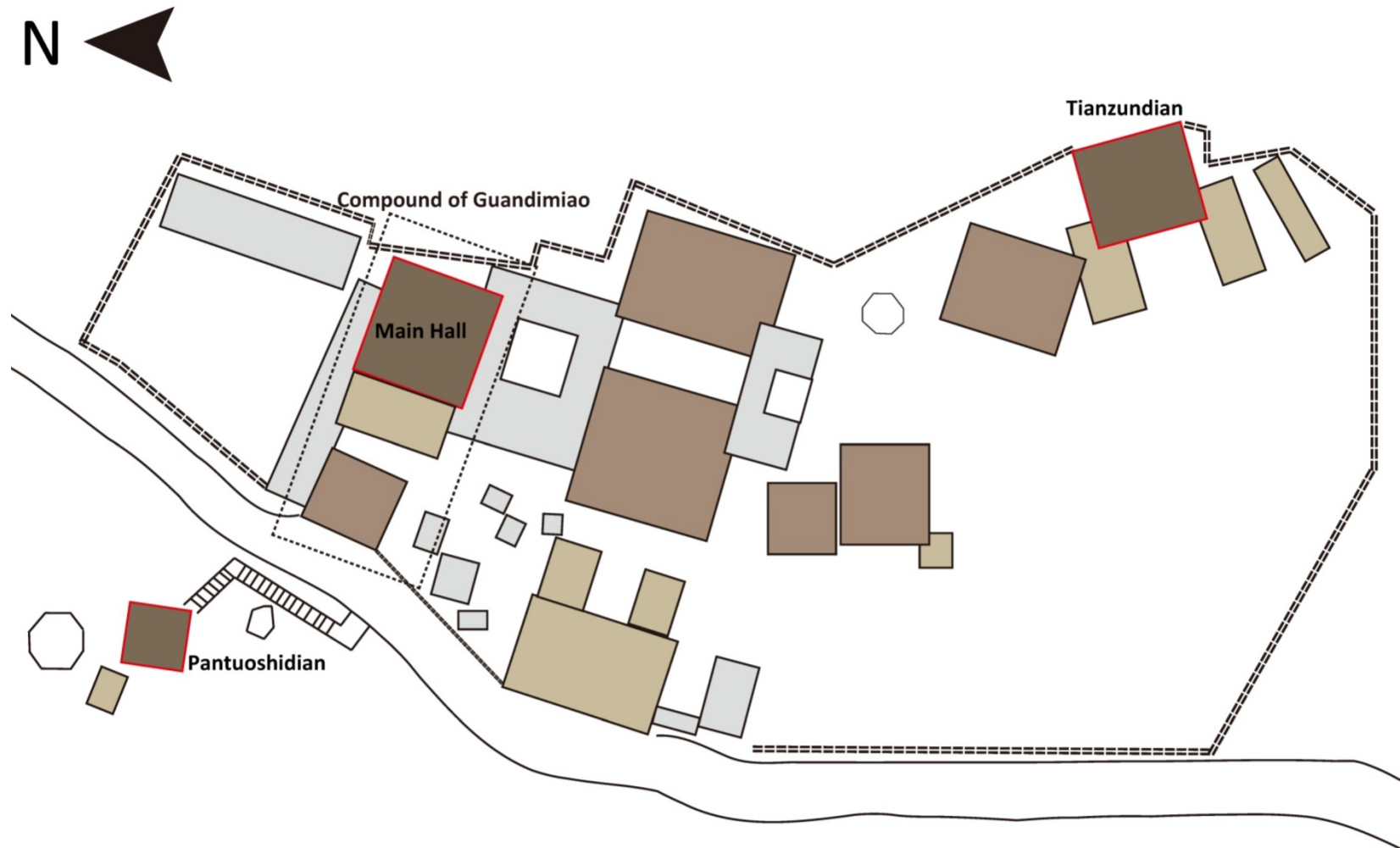


Figure 2.8b Plan of Pantuoshidian, Qiqushan Damiao

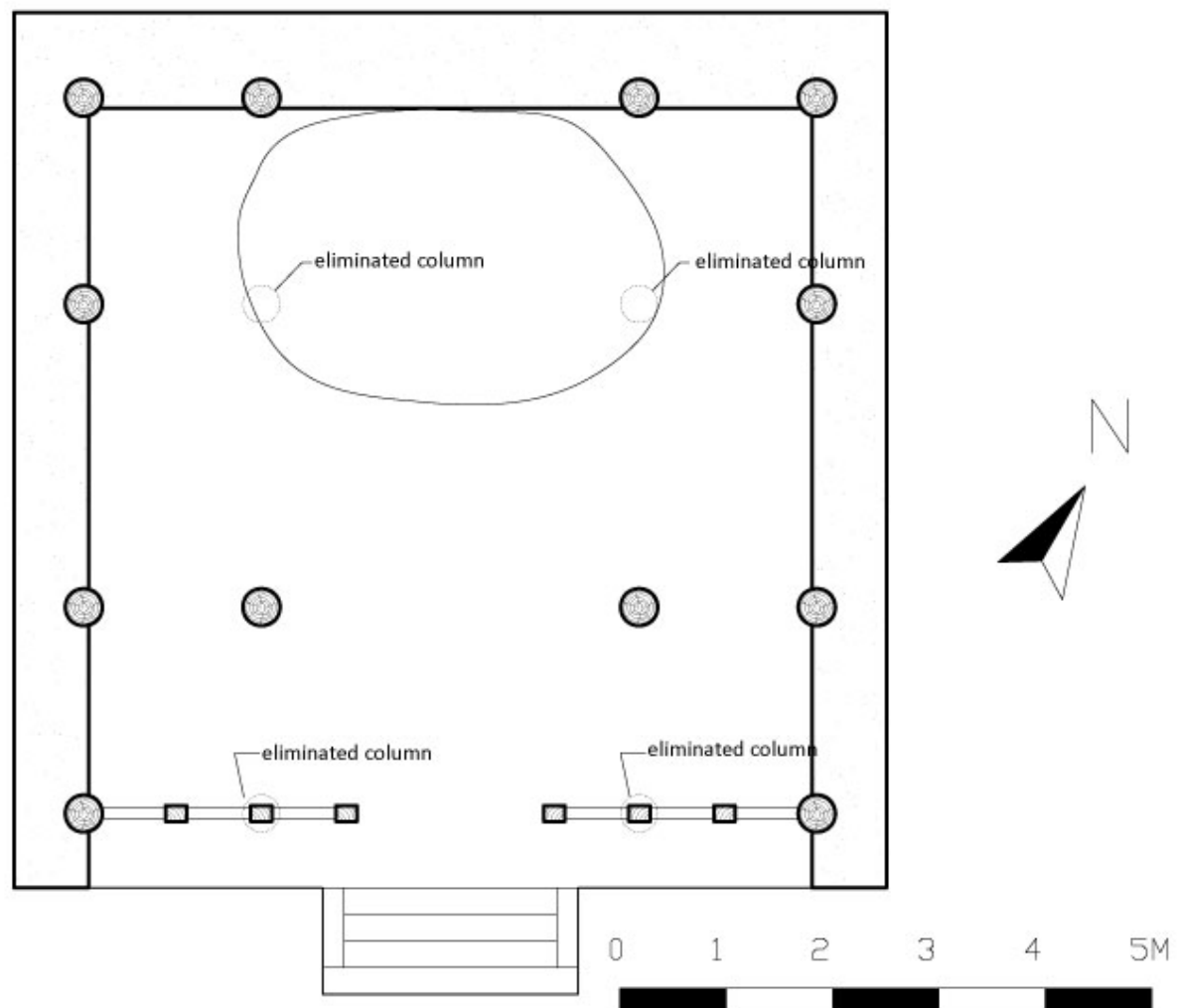


Figure 2.8c Façade of Pantuoshidian, Qiqushan damiao

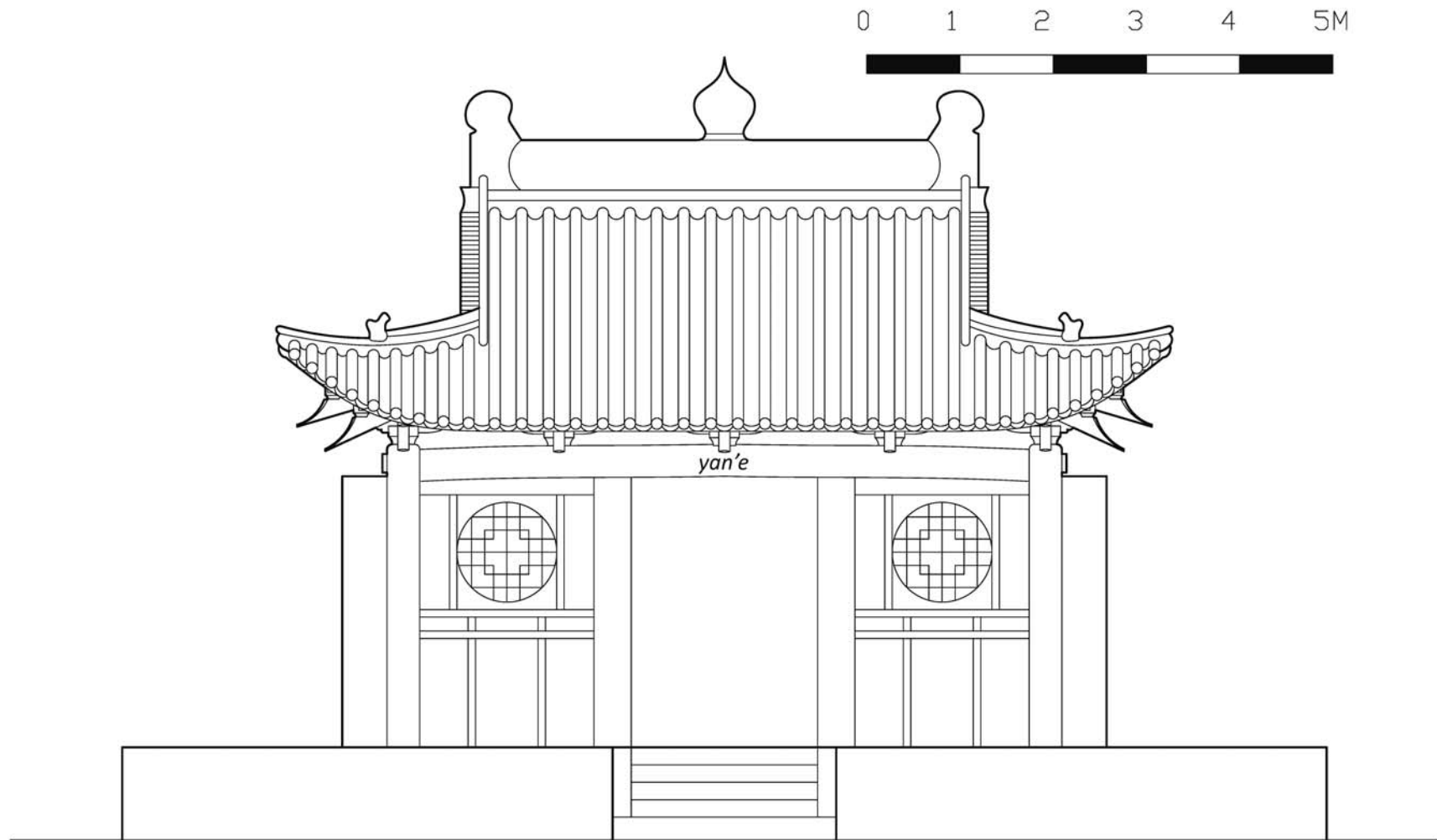




Figure 2.8d Bottom view of the intercolumnar set on the facade, Pantuoshidian, Qiqushan Damiao

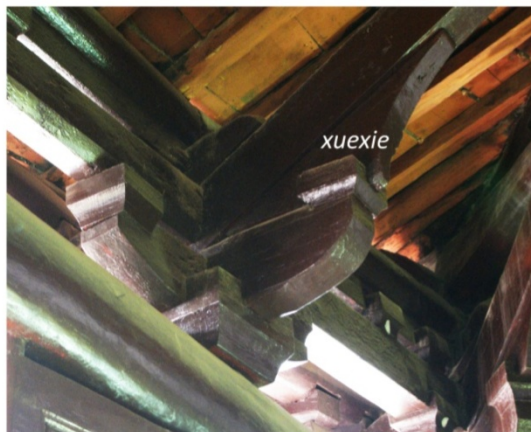


Figure 2.8e Back view of the intercolumnar set

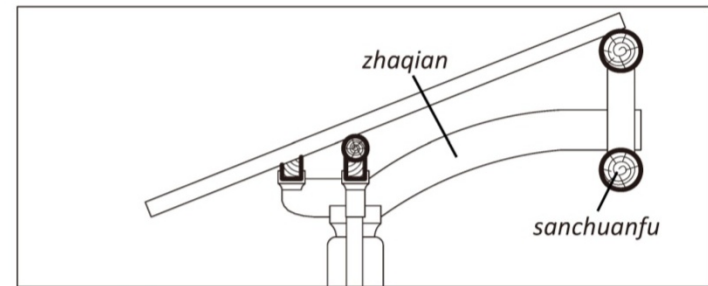


Figure 2.8f Sectional view of the capital set on the side, Pantuoshidian, Qiqushan Damiao

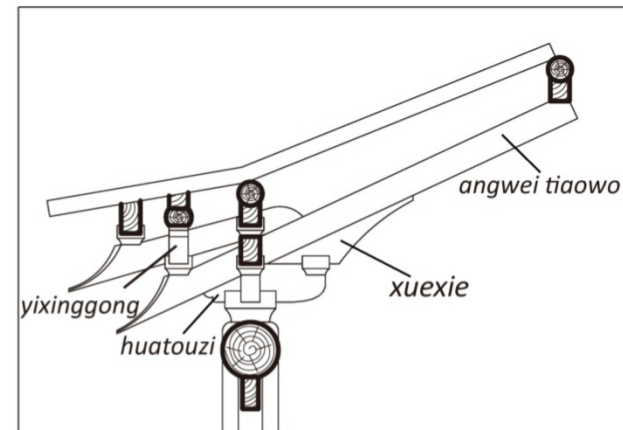


Figure 2.8g Bracket Sets of Pantuoshidian, Qiqushan Damiao.

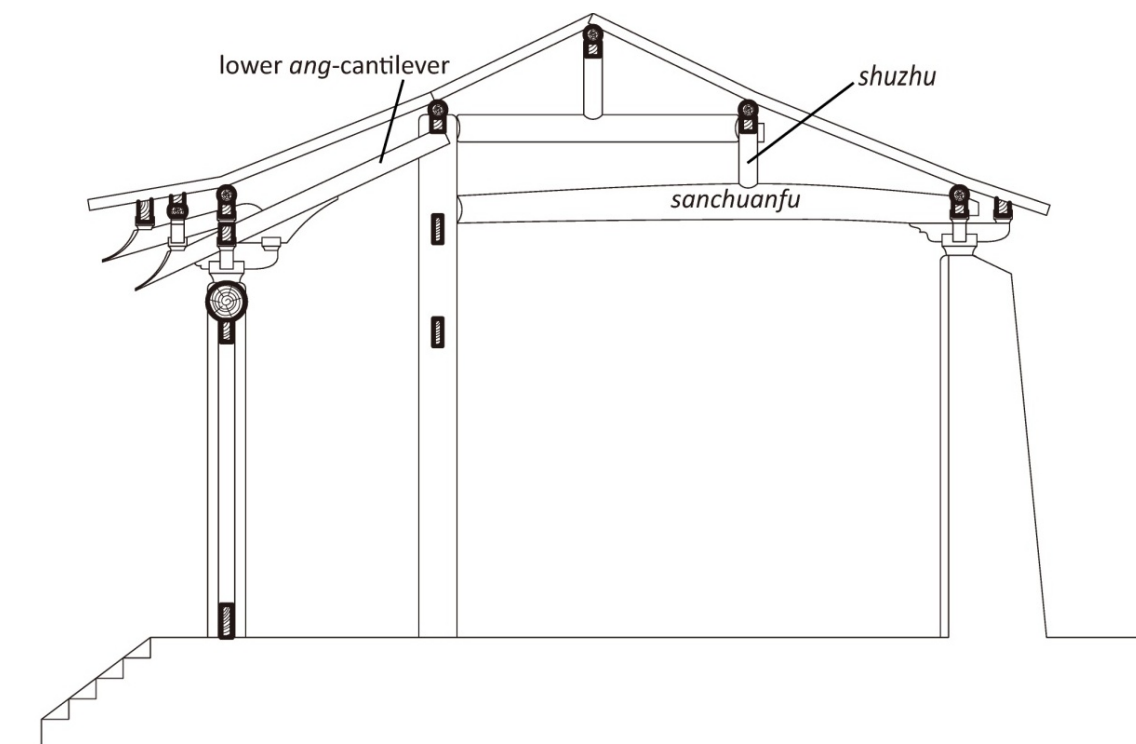


Figure 2.8h North-south sectional view of Pantuoshidian, Qiqushan Damiao

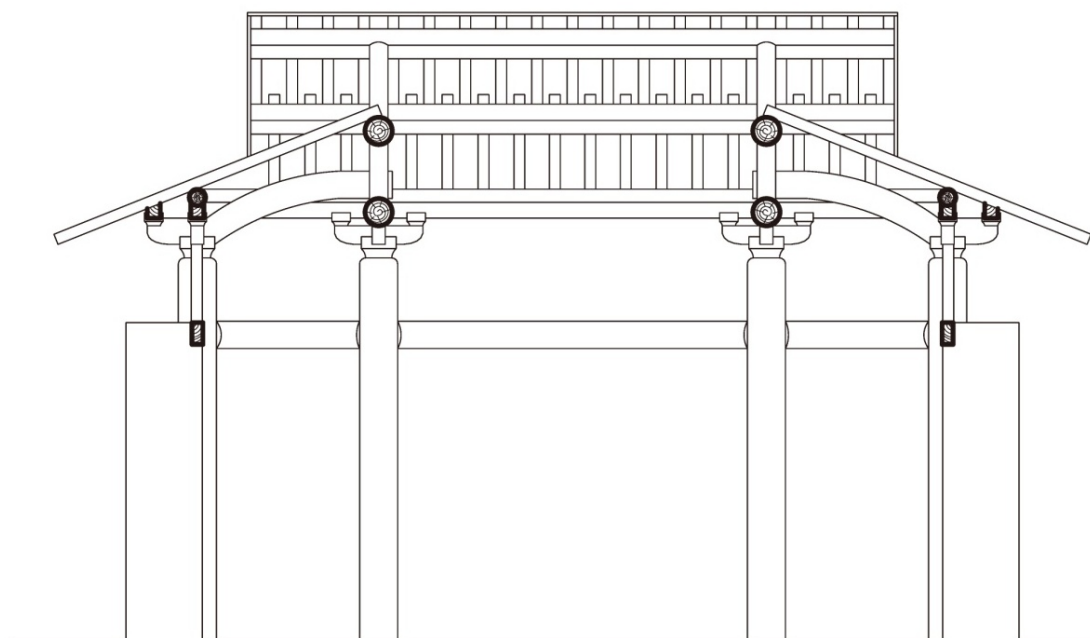


Figure 2.8i East-west sectional view of Pantuoshidian, Qiqushan Damiao

Figure 2.8j Layout of Guandimiao, Qiqushan Damiao

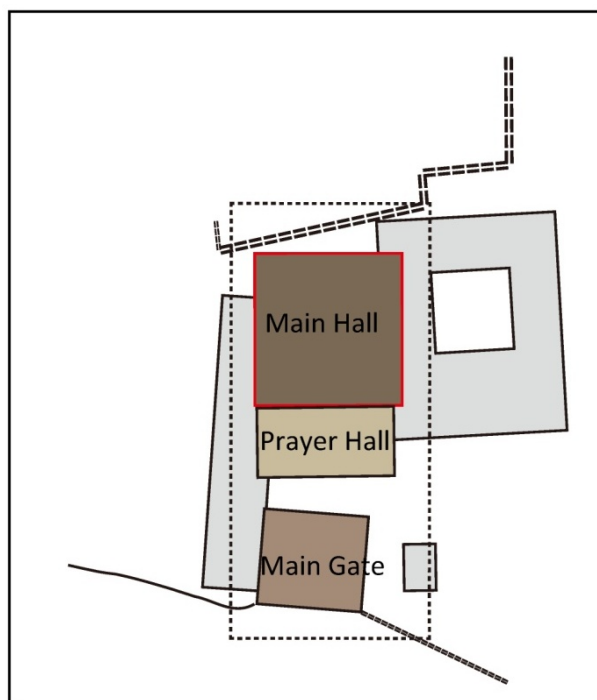


Figure 2.8k Plan of the Main Hall of Guandimiao, Qiqushan Damiao.

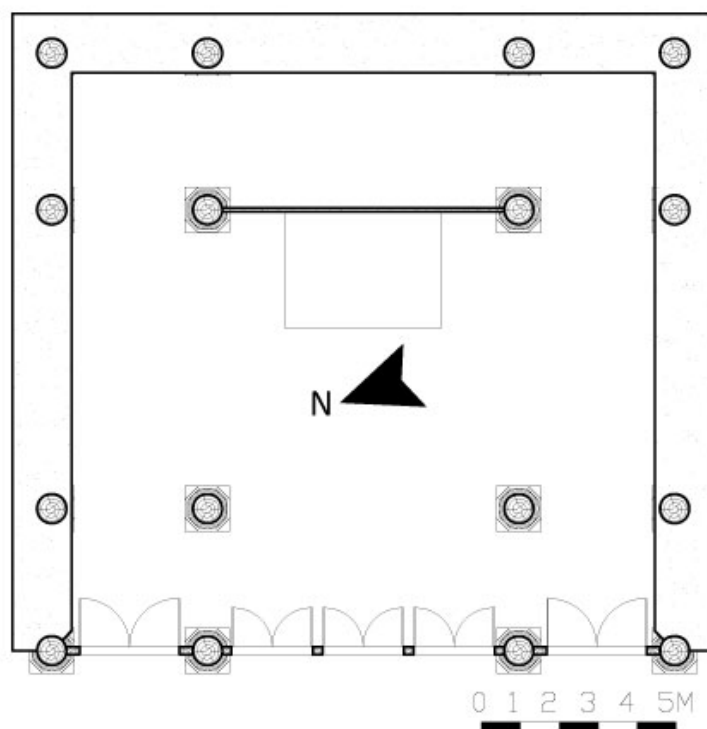
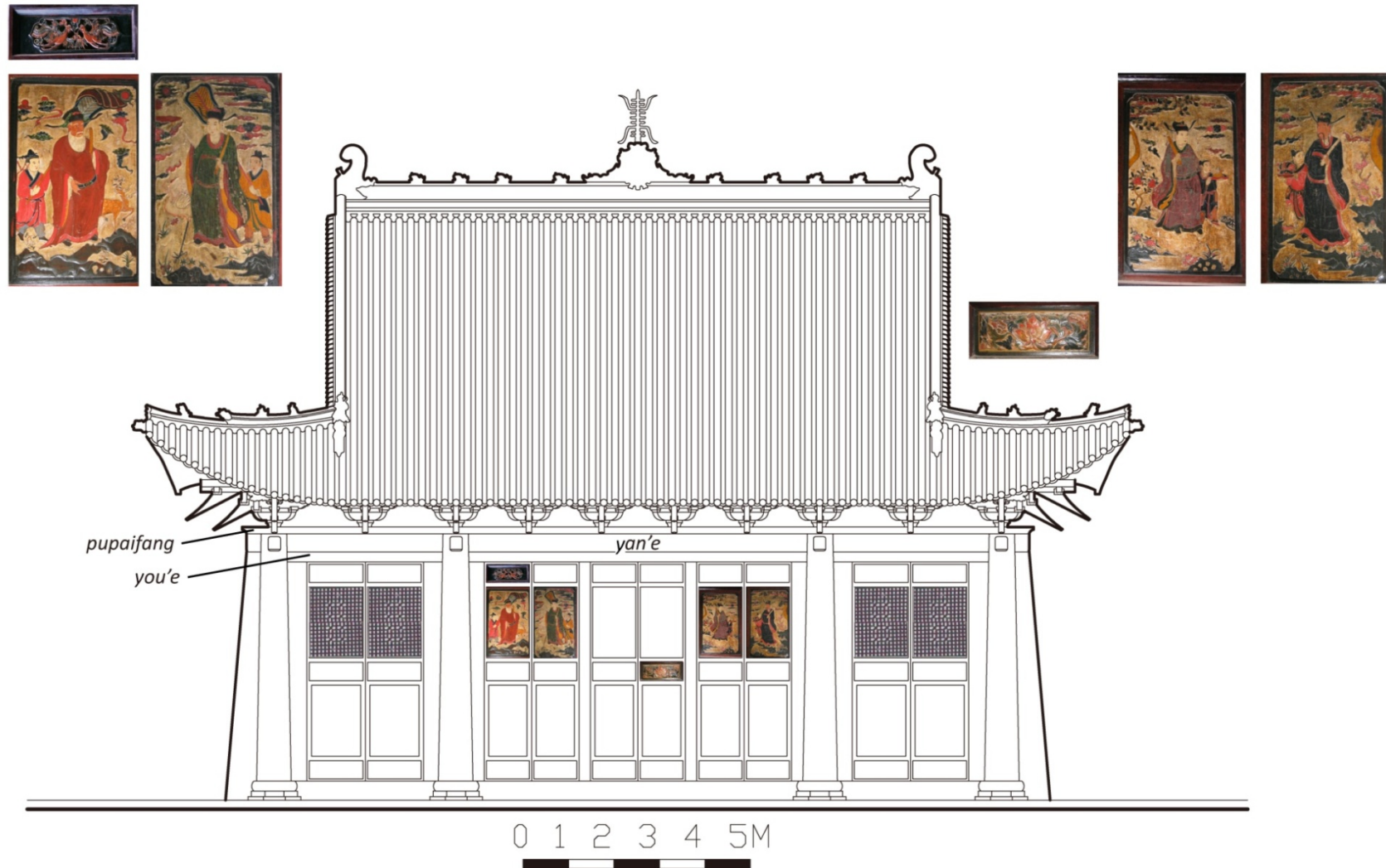


Figure 2.8I Facade of the Main Hall, Guandimiao, Qiqushan damiao



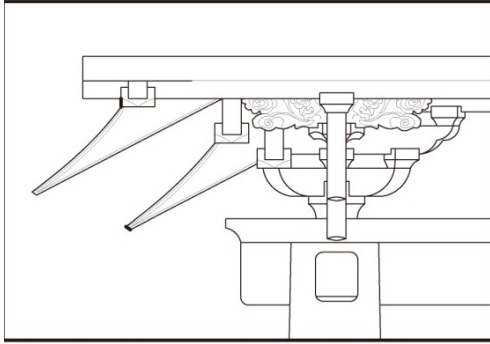


Figure 2.8m Corner set, Main Hall of Guandimiao, Qiqushan Damiao

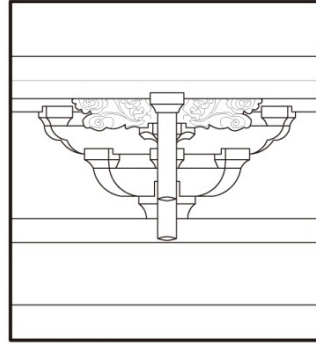


Figure 2.8o Front view of the intercolumnar set, the Main Hall of Guandimiao, Qiqushan Damiao

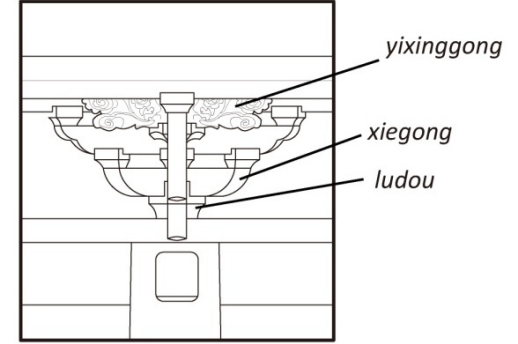


Figure 2.8q Front view of the capital set, the Main Hall of Guandimiao, Qiqushan



Figure 2.8n Capital set, the Main Hall of Guandimiao, Qiqushan Damiao

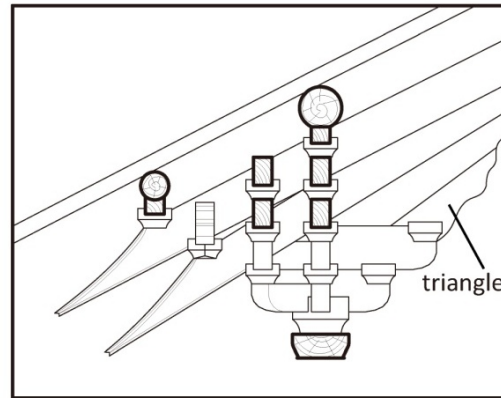


Figure 2.8p Sectional view of the intercolumnar set, the Main Hall of Guandimiao, Qiqushan Damiao

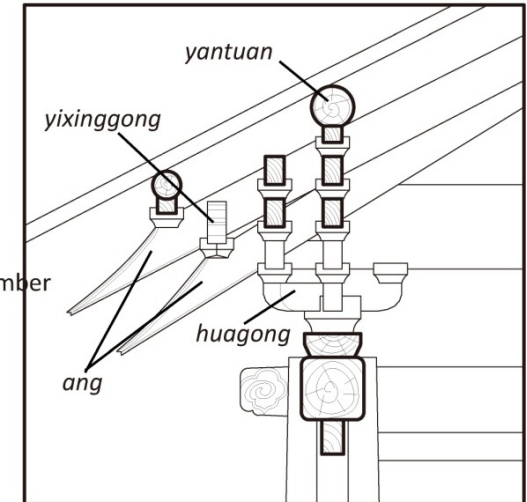


Figure 2.8r Sectional view of the capital set, the Main Hall of Guandimiao, Qiqushan Damiao

Figure 2.8s East-west sectional view of the Main Hall of Guandimiao, Qiqushan damiao

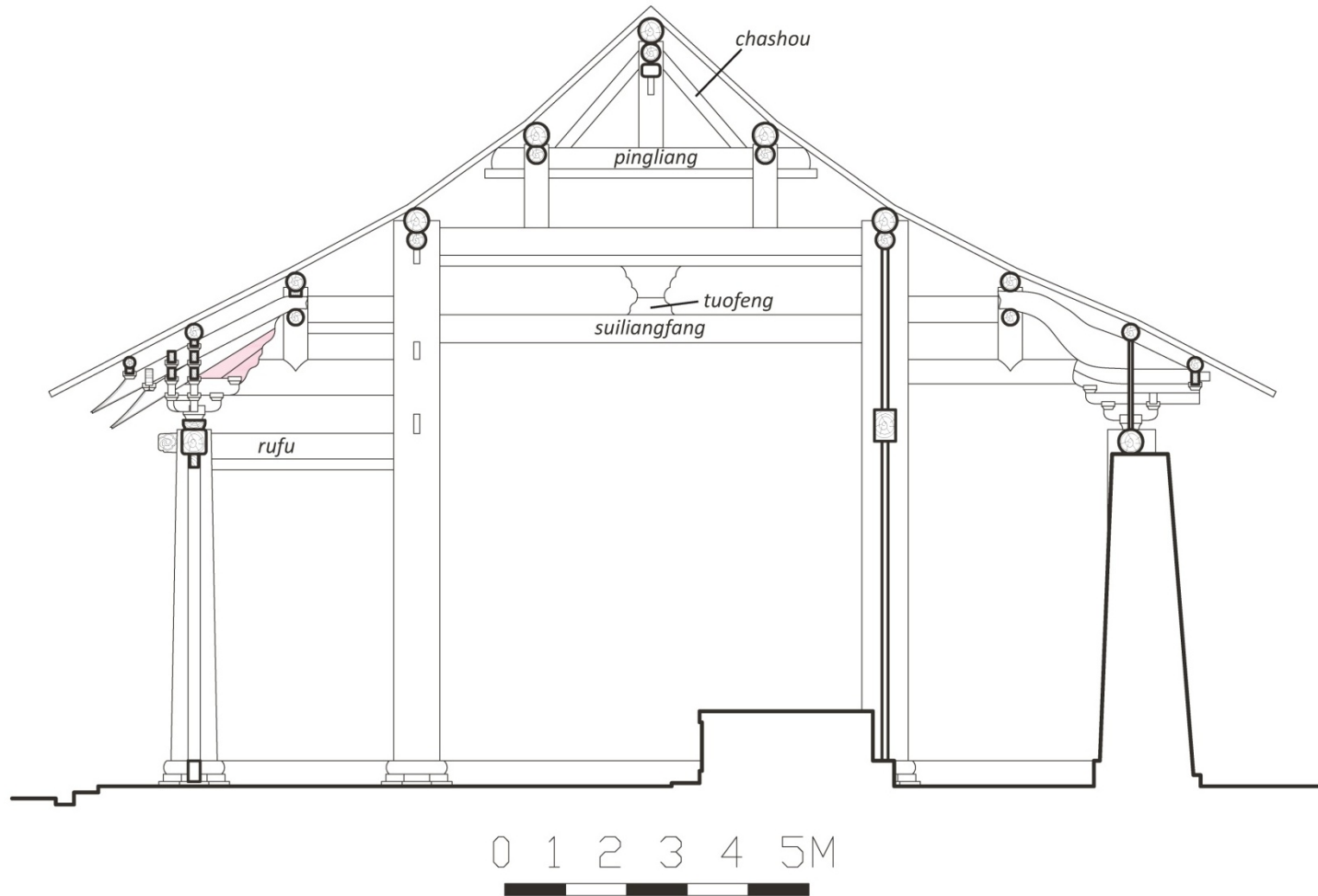


Figure 2.9a Plan of Yong'anmiao

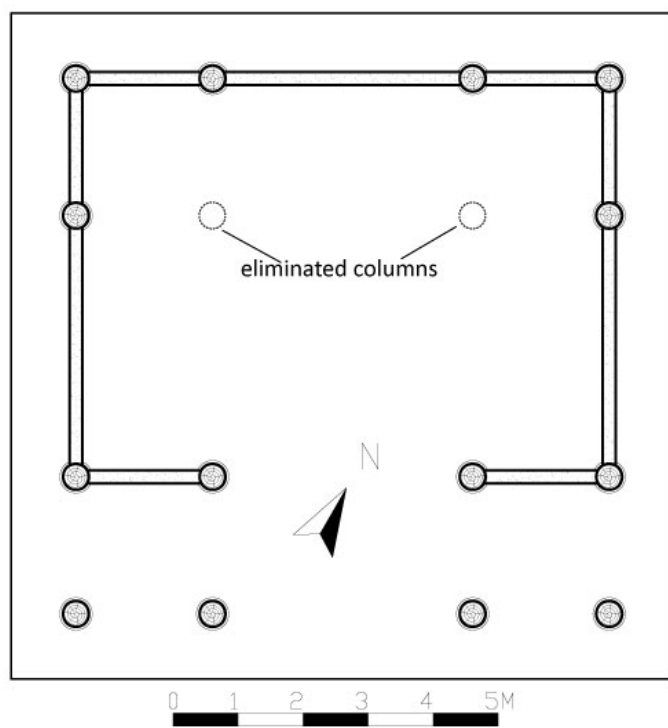
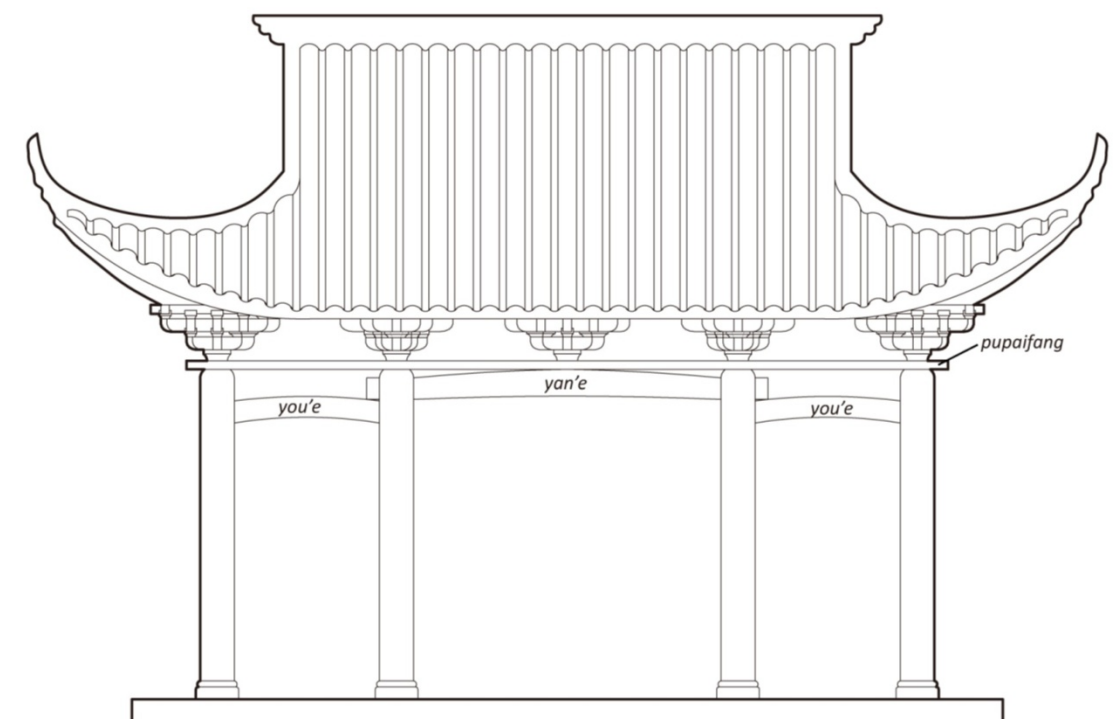


Figure 2.9b Facade of Yong'anmiao



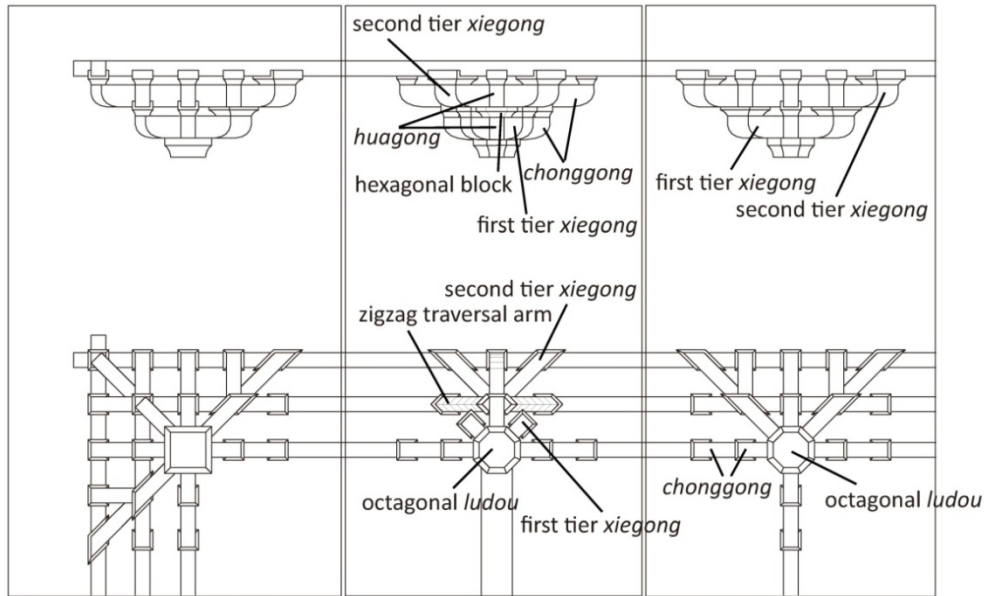


Figure 2.9c Front(top) and bottom(bottom) view of the corner set, Yong'anmiao

Figure 2.9d Front(top) and bottom(bottom) view of the capital set, Yong'anmiao

Figure 2.9e Front(top) and bottom(bottom) view of the intercolumnar set, Yong'anmiao

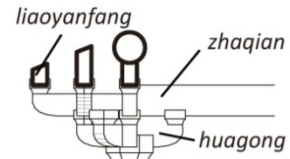


Figure 2.9f Sectional view of the capital set, Yong'anmiao

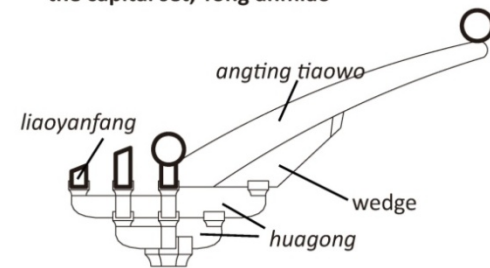


Figure 2.9g Sectional view of the intercolumnar set, Yong'anmiao



Figure 2.9h Picture of the capital and corner bracket sets, Yong'anmiao

Figure 2.9i North-south sectional view of Yong'anmiao

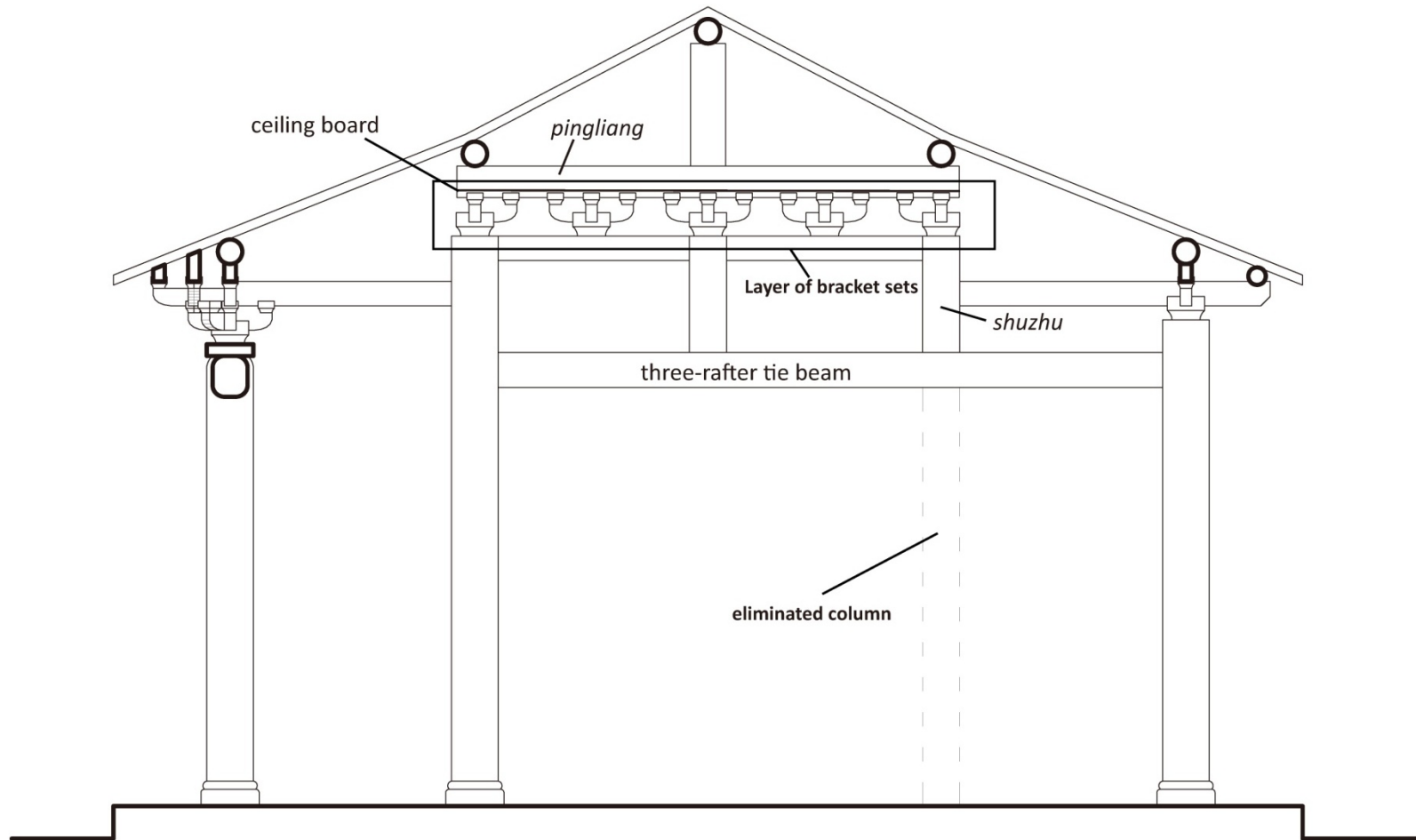


Figure 2.10a Plan of the Main Hall, Dou-Kousi

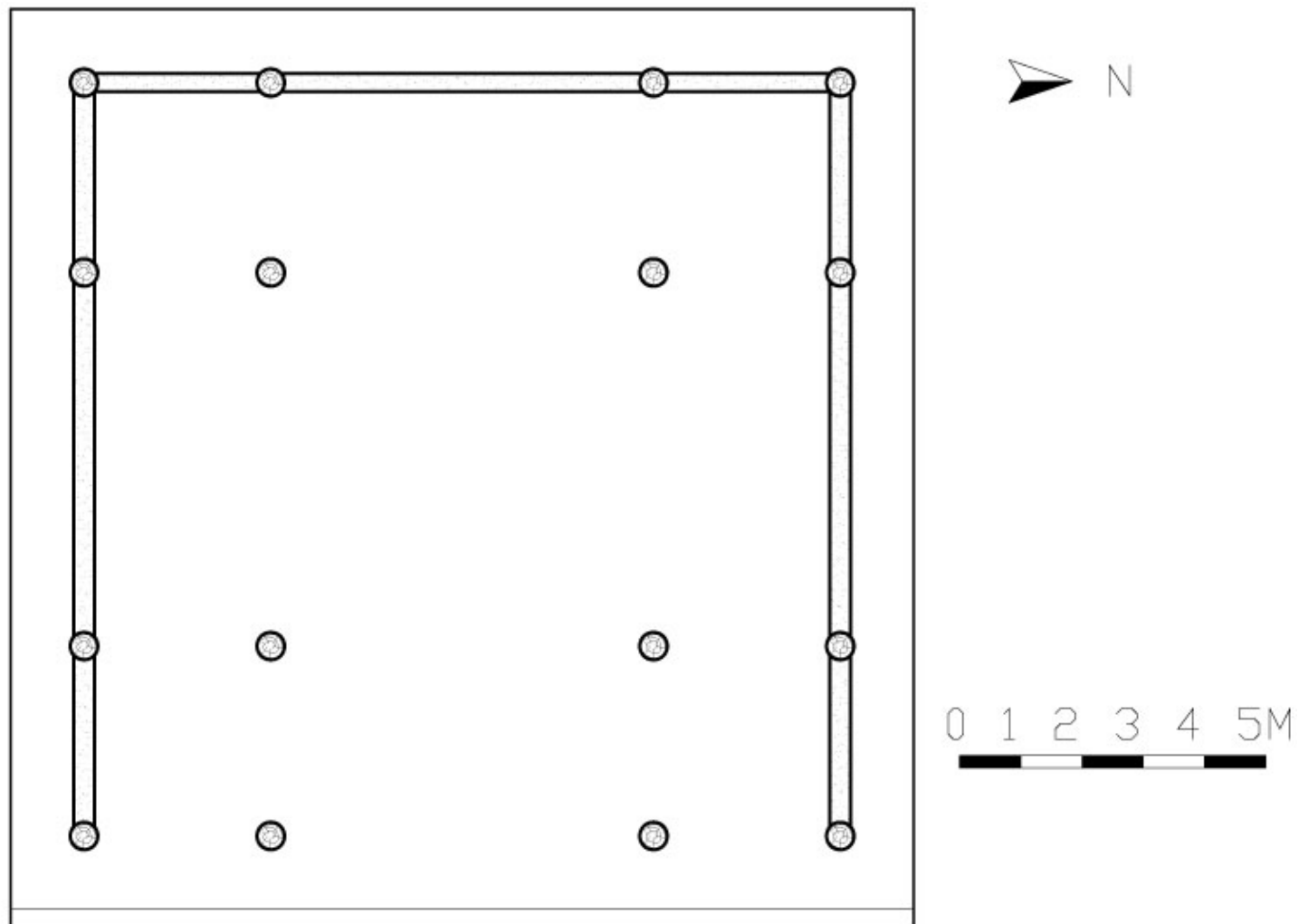


Figure 2.10b Facade of the Main Hall, Dou-Kousi

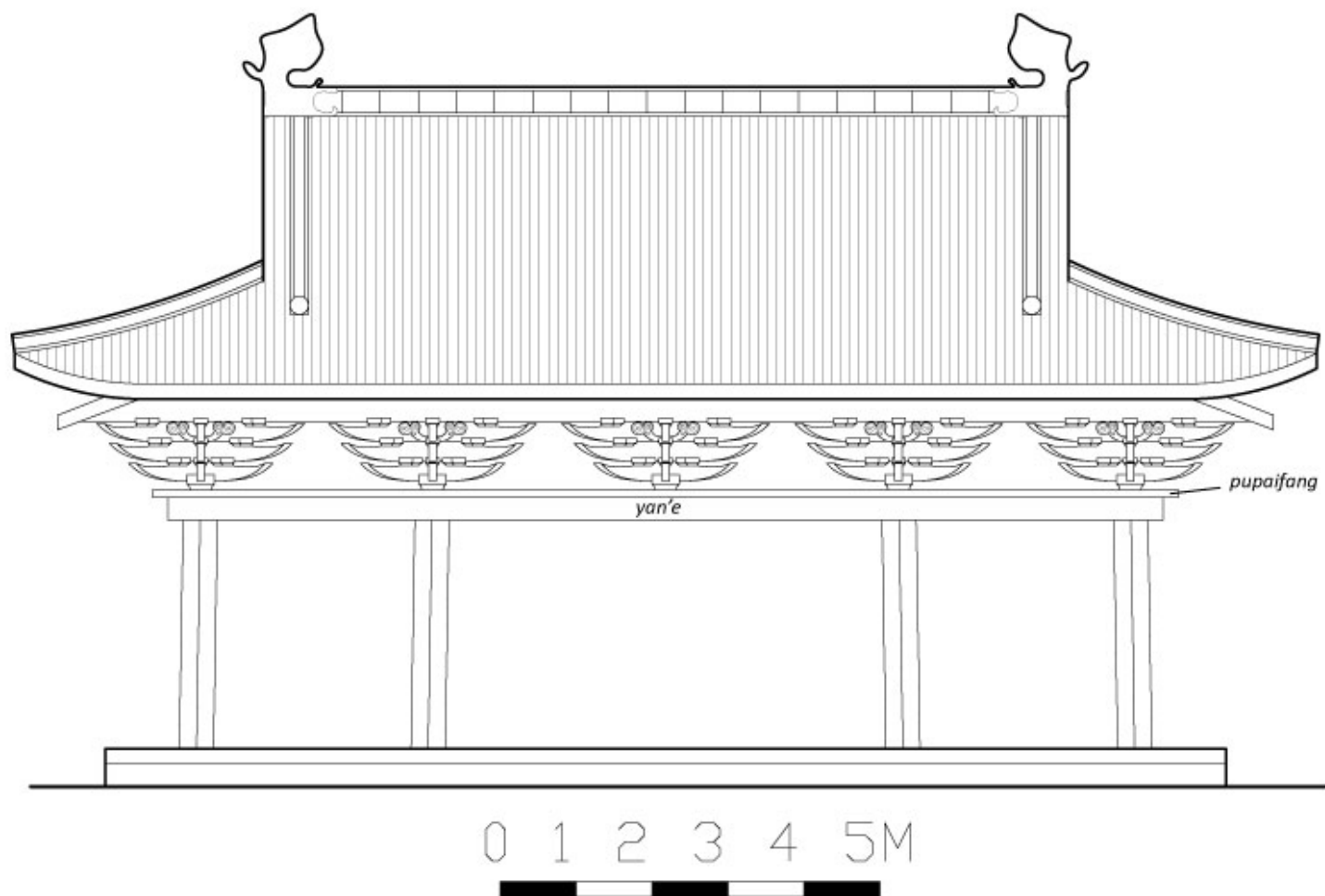




Figure 2.10c Picture of the capital set, Main Hall, Dou-Kousi



Figure 2.10d Picture of the rear view of the capital set, Main Hall, Dou-Kousi

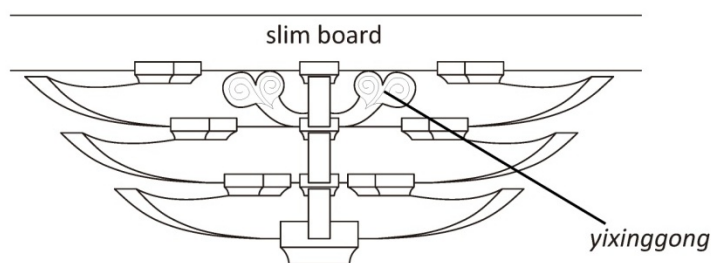


Figure 2.10e Front view of the capital set, Main Hall, Dou-Kousi

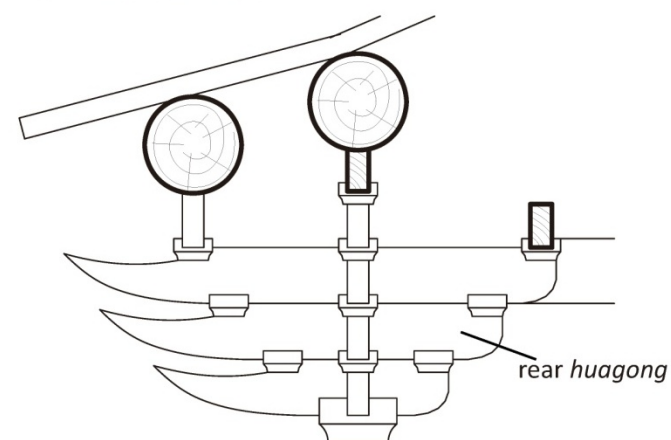


Figure 2.10f Sectional view of the capital set, Main Hall, Dou-Kousi



Figure 2.10g Wanfoge 万佛阁 (Ten Thousand Buddas Pavilion) of Bao'ensi



Figure 2.10h Color paintings on the components and the pointed bottom of the dwarf pillar, Main hall, Dou-Kousi

Figure 2.10i East-west sectional view of the Main Hall, Doukousi

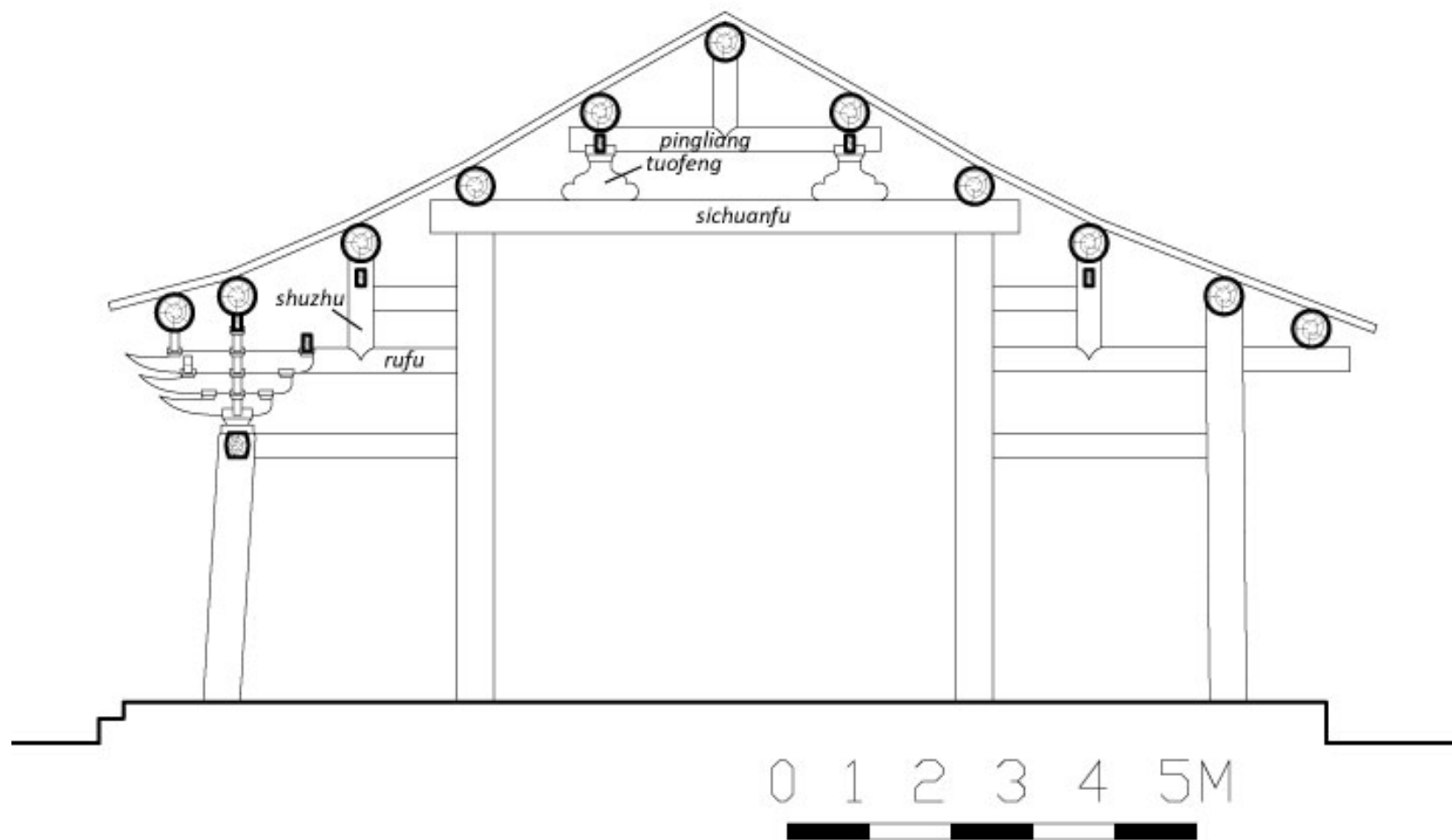


Figure 2.11a Photograph of Main Hall, Dubaisi



Figure 2.11b Plan of the Main Hall, Dubaisi

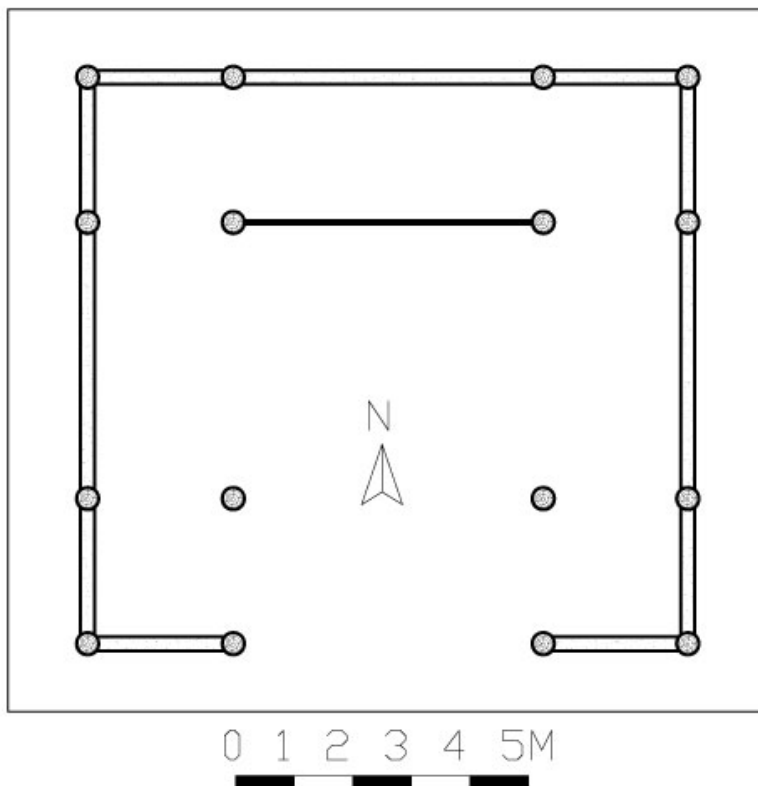


Figure 2.11c Pictures of the roof structure of the Main Hall, Dubaisi



front eave column

front interior column



rear interior column

shunchenchuan





Figure 2.11d Picture of the capital set and the intercolumnar set on the facade, the Main Hall, Dubaisi



Figure 2.11e Picture of the rear view of the intercolumnar set, the Main Hall, Dubaisi



Figure 2.11f Picture of the rear view of the capital set, the Main Hall, Dubaisi

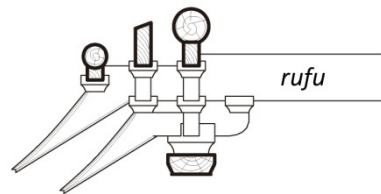


Figure 2.11g Sectional view of the capital set, the Main Hall, Dubaisi

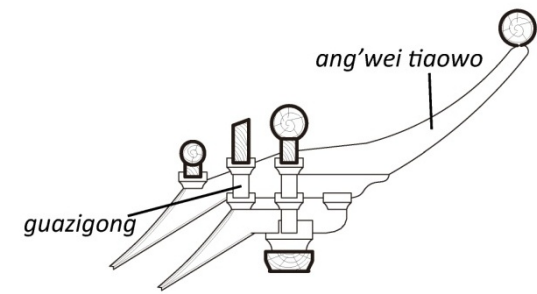
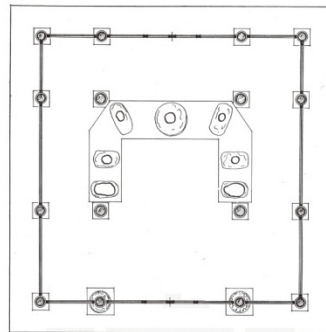
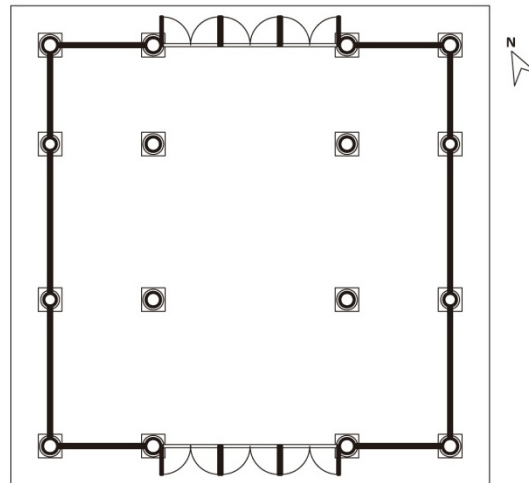


Figure 2.11h Sectional view the intercolumna set, the Main Hall, Dubaisi

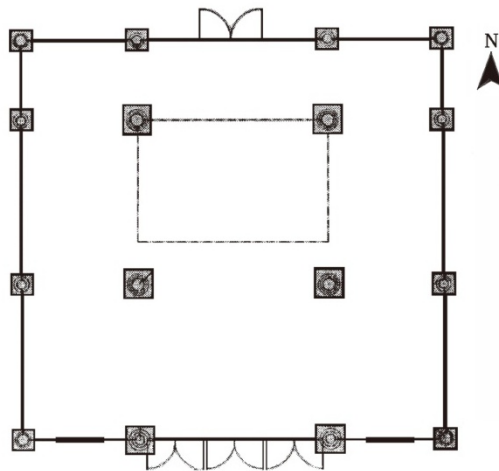
Figure 3.1a Squarish Building Plans in Jiangnan



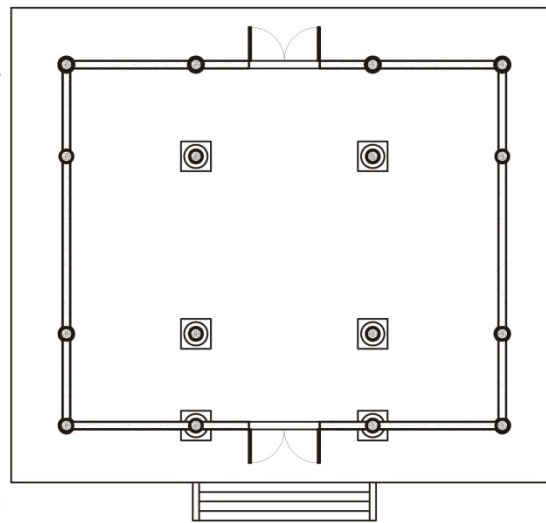
Main Hall of Yanfusi(1317)



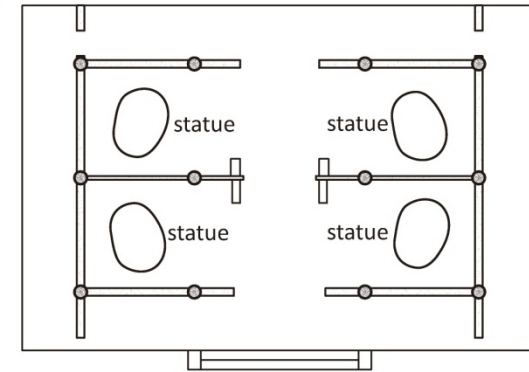
Main Hall of Tianningsi(1318)



Main Hall of Zhenrusi(1320)



Main Hall of Xuanyuangong(Late Yuan)



Ershanmen of Yunyansi(1338)

Figure 3.1b Rectangular Building Plan in Jiangnan



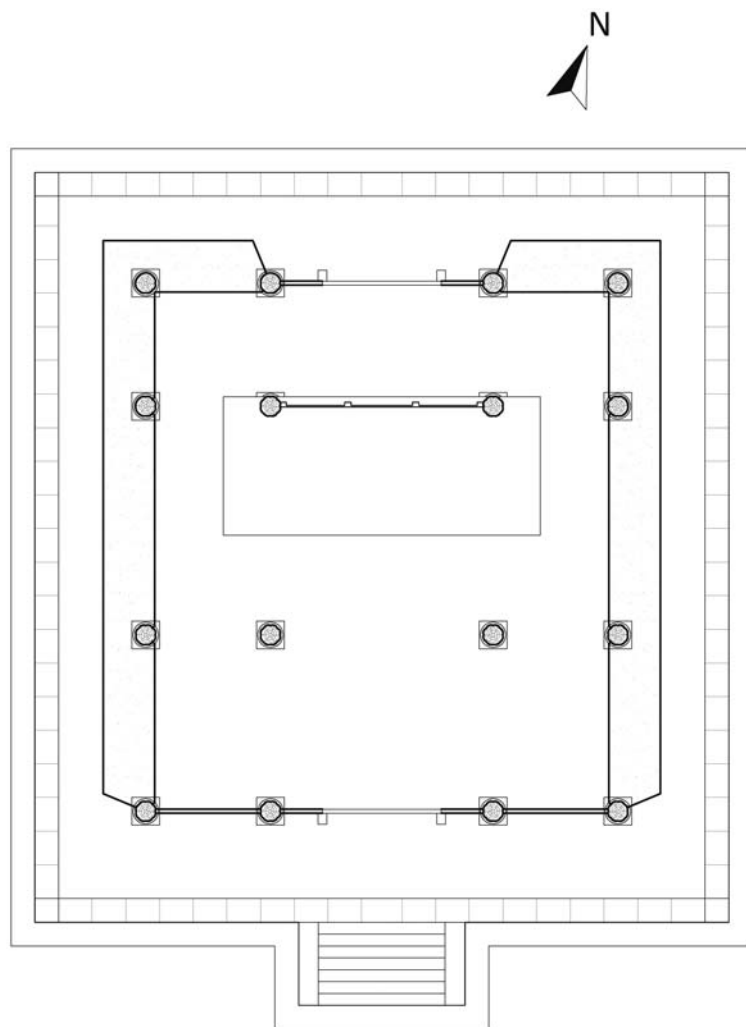


Figure 3.1c Plan of the Main Hall of Baogusi (1013)

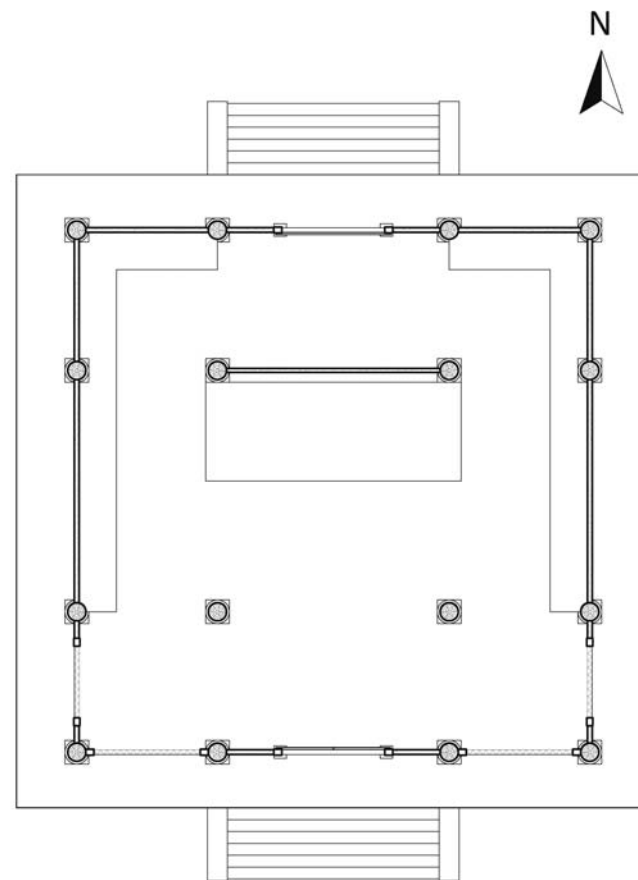
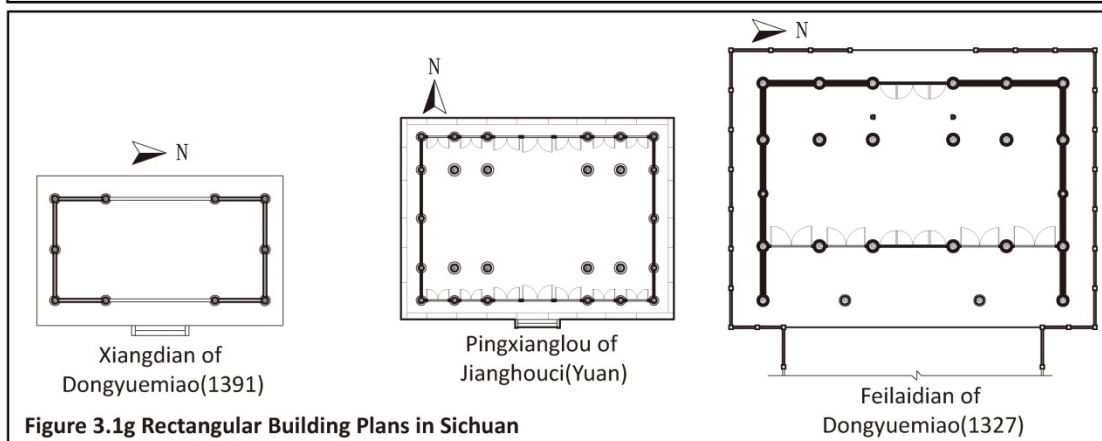
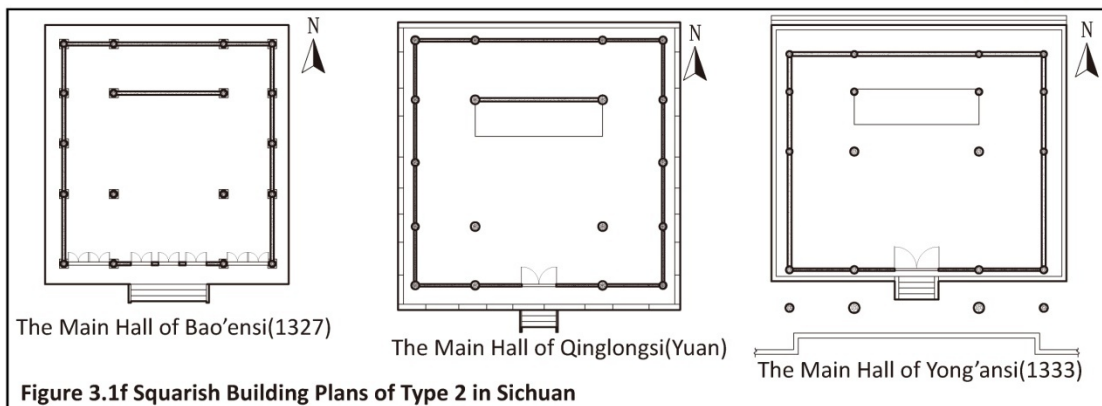
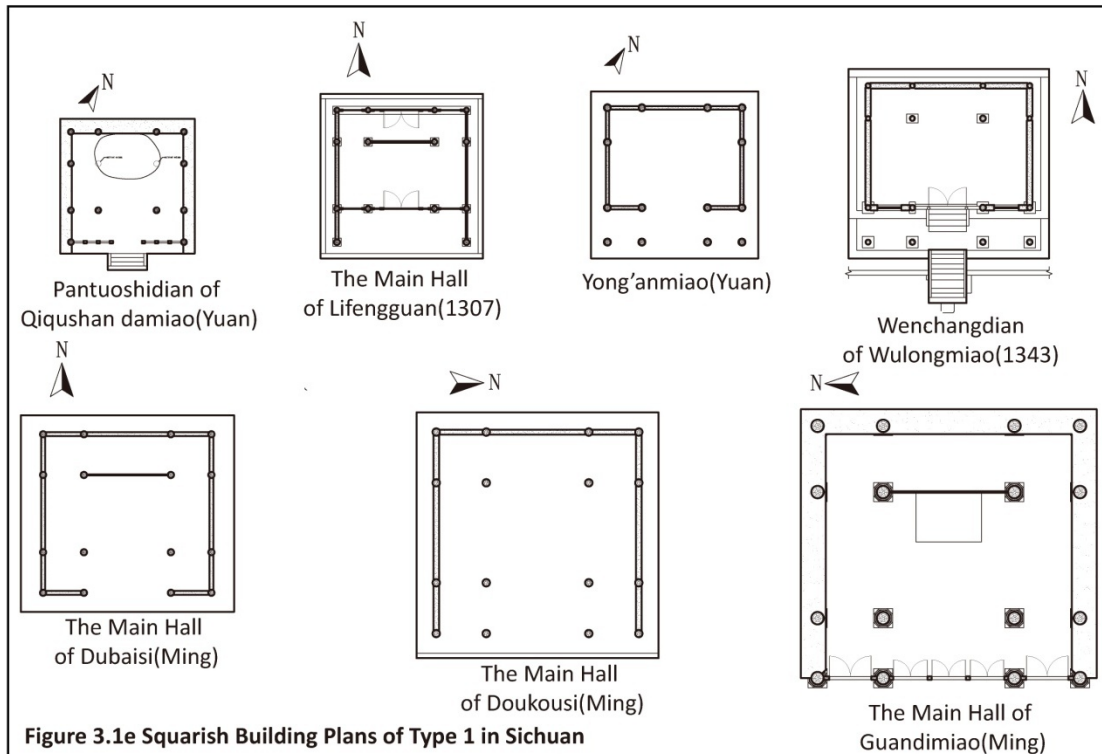


Figure 3.1d Plan of the Main Hall of Baoshengsi (1073)

0 1 2 3 4 5M



0 3 6 9 12 15M

Figure 3.1h Plan of Feitian zangdian in Yunyansi

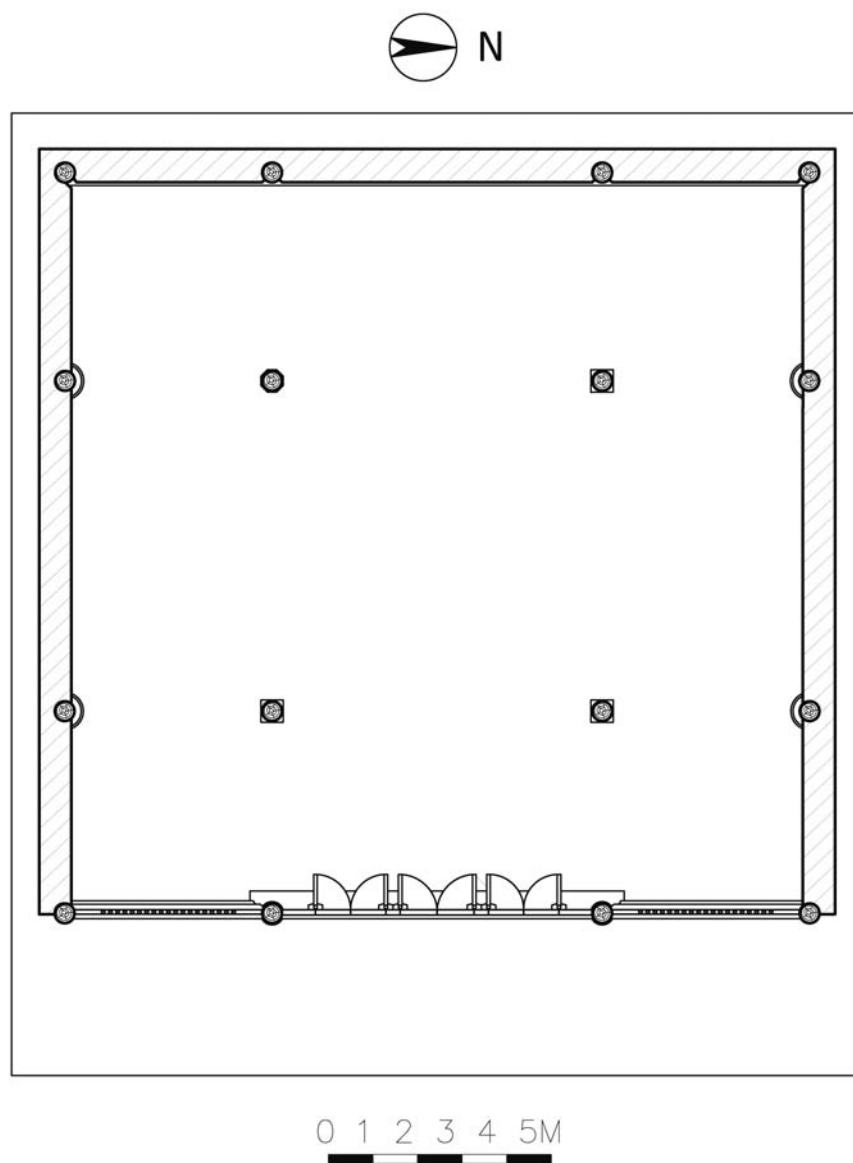


Figure 3.1i Jianzhuzao in Sichuan

■ eliminated column

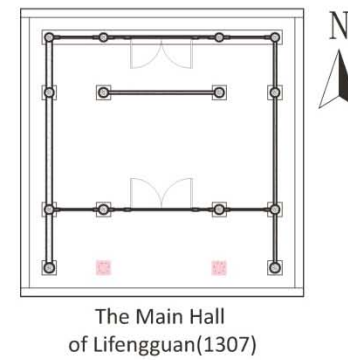
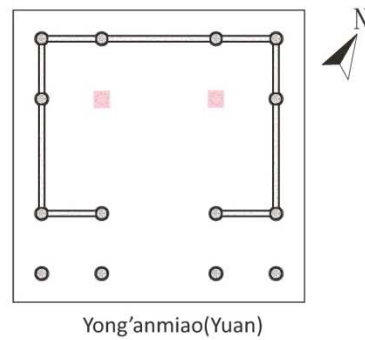
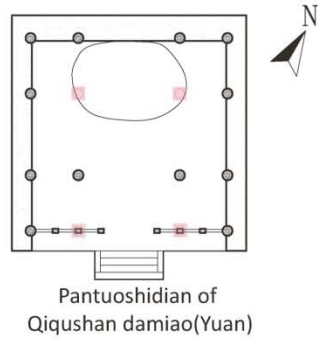
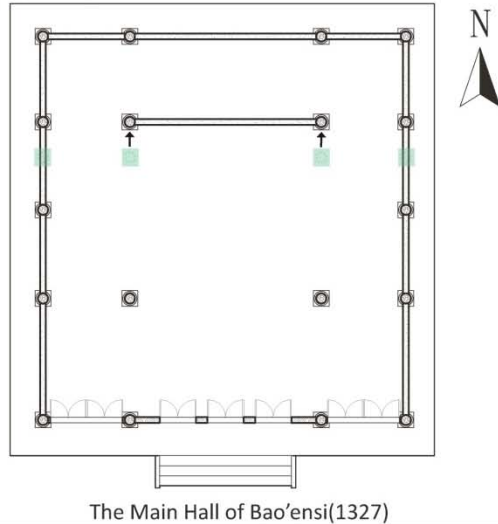


Figure 3.1j Yizhuzao in Sichuan

■ displaced column



0 1 2 3 4 5M

Figure 3.1k Plan of Feilaidian of Dongyuemiao(1327)

■ displaced column ■ eliminated column

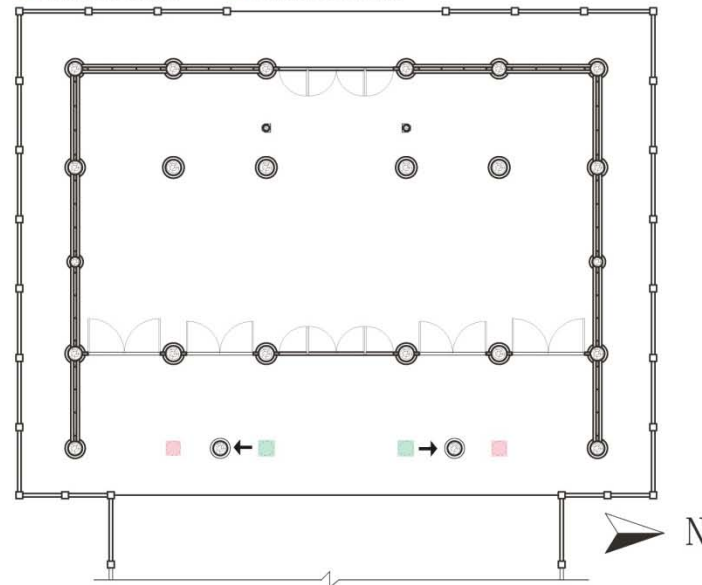


Figure 3.2a Layout of intercolumnar bracket sets in Jiangnan			
Phase	Building	Date	"x" for one intercolumnar set
Song	The Main Hall of Baoguosi	1013	
	The Main Hall of Baoshengsi	1073	
Yuan	The Main Hall of Yanfusi	1317	
	The Main Hall of Tianningsi	1318	
	Ershanmen of Yunyansi	1338	
Ming	The Main Hall of Xuanyuangong	NA	
	The Main Hall of Zhenrusi	NA	

0 2 4 6

327

Figure 3.2c Bracket sets of the Song Buildings in Jiangnan



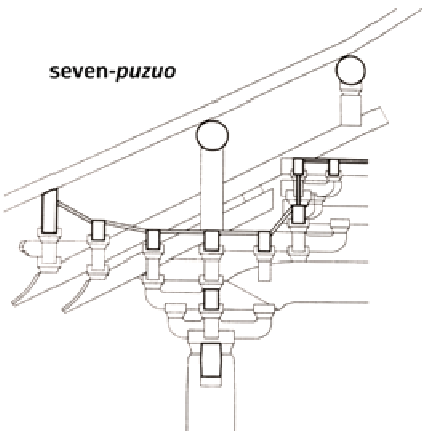
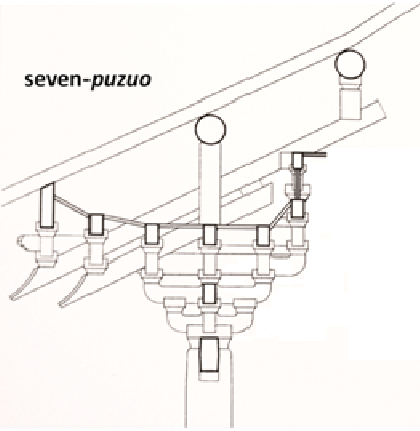
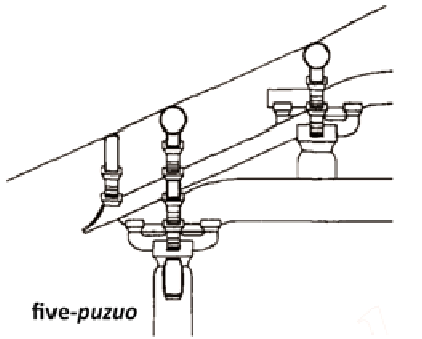
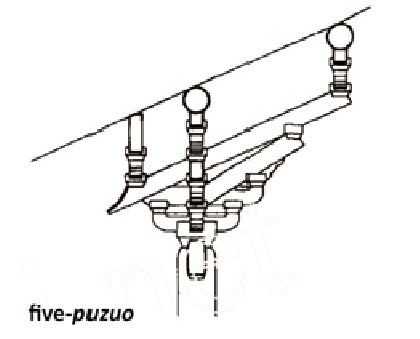
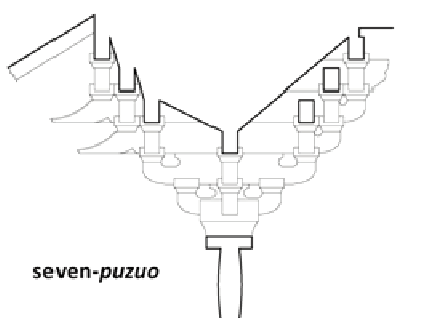
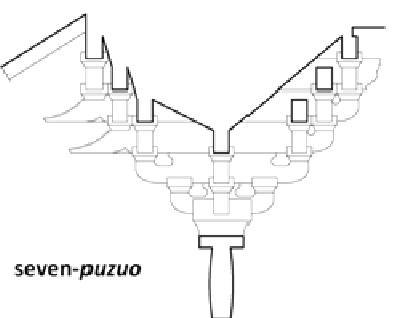
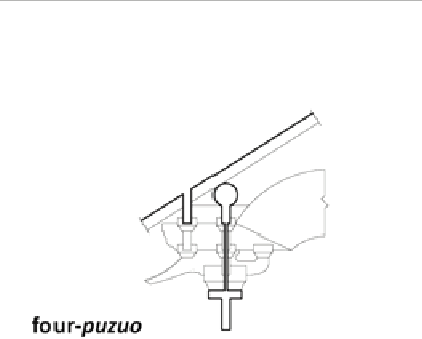
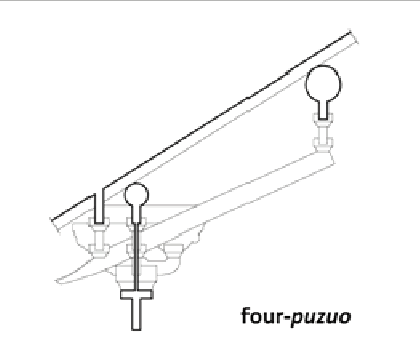
Building	Date	Capital Set	Intercolumnar Set
The Main Hall of Baoguosi	1013	 <p>seven-puzuo</p>	 <p>seven-puzuo</p>
The Main Hall of Baoshengsi	1073	 <p>five-puzuo</p>	 <p>five-puzuo</p>
Sanqingdian of Xuanmiaoguan (upper eave)	1179	 <p>seven-puzuo</p>	 <p>seven-puzuo</p>
Sanqingdian of Xuanmiaoguan (lower eave)	1179	 <p>four-puzuo</p>	 <p>four-puzuo</p>

Figure 3.2d Bracket sets of the Yuan Buildings in Jiangnan



Building	Date	Capital Set	Intercolumnar Set
The Main Hall of Yanfusi	1317	<i>six-puzuo</i> 	<i>six-puzuo</i>
The Main Hall of Tianningsi	1318	<i>six-puzuo</i> 	<i>six-puzuo</i>
Ershanmen of Yunyansi	1338	<i>four-puzuo</i> 	<i>four-puzuo</i>
The Main Hall of Xuanyuangong	Ming	<i>five-puzuo</i> 	<i>five-puzuo</i>
The Main Hall of Zhenrusi	Ming	<i>four-puzuo</i> 	<i>four-puzuo</i>

Figure 3.2e Capital and Intercolumnar Bracket Sets in Sichuan

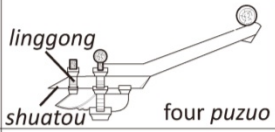
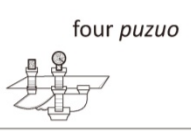
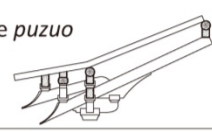
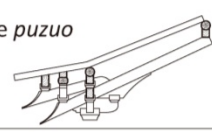
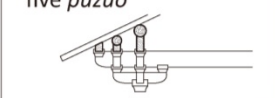
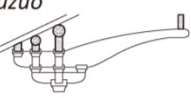
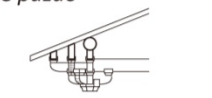
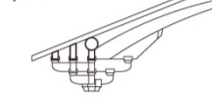
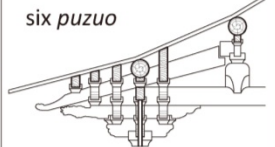
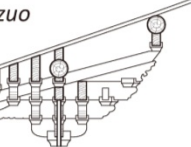
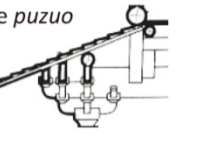
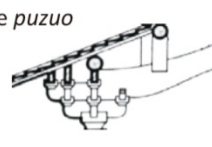
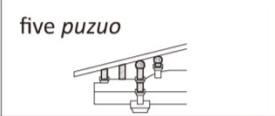
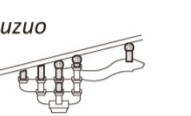
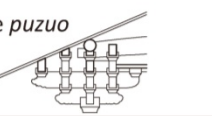
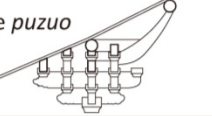
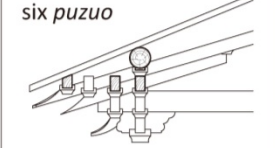
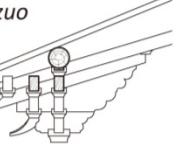
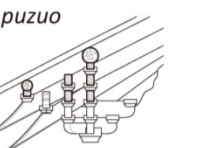
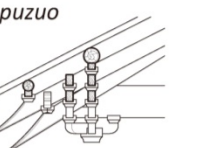
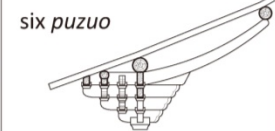
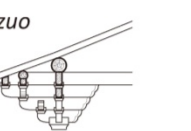
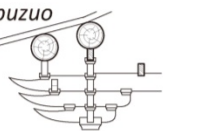
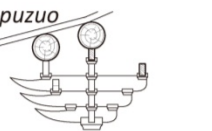
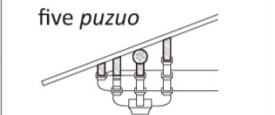
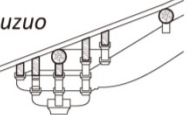
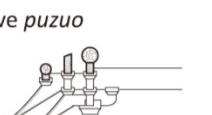
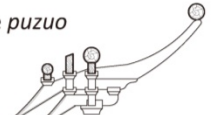
Building	Date	Capital Set	Intercolumnar Set	Building	Date	Capital Set	Intercolumnar Set
Feitianzangdian of Yunyansi	1181	 <i>linggong</i> <i>shuatou</i> four <i>puzuo</i>	 four <i>puzuo</i>	Pantuoshidian of Qiqushan damiao	Yuan	 five <i>puzuo</i>	 five <i>puzuo</i>
The Main Hall of Lifengguan	1307	 five <i>puzuo</i>	 five <i>puzuo</i>	Yong'anmiao	Yuan	 five <i>puzuo</i>	 five <i>puzuo</i>
Feilaidian of Dongyuanmiao	1327	 six <i>puzuo</i>	 six <i>puzuo</i>	Pingxianglou of Jianghouci	Yuan	 five <i>puzuo</i>	 five <i>puzuo</i>
The Main Hall of Bao'ensi	1327	 five <i>puzuo</i>	 five <i>puzuo</i>	Xiangdian of Dongyuemiao	1391	 five <i>puzuo</i>	 five <i>puzuo</i>
The Main Hall of Yong'ansi	1333	 six <i>puzuo</i>	 six <i>puzuo</i>	The Main Hall of Guanwangmiao	Ming	 six <i>puzuo</i>	 six <i>puzuo</i>
Wenchangdian of Wulongmiao	1343	 six <i>puzuo</i>	 six <i>puzuo</i>	The Main Hall of Doukousi	Ming	 six <i>puzuo</i>	 six <i>puzuo</i>
The Main Hall of Qinglongsi	Yuan	 five <i>puzuo</i>	 five <i>puzuo</i>	The Main Hall of Dubaisi	Ming	 five <i>puzuo</i>	 five <i>puzuo</i>

Figure 3.2f Regulation about *fubigong* in *Yingzao fashi*

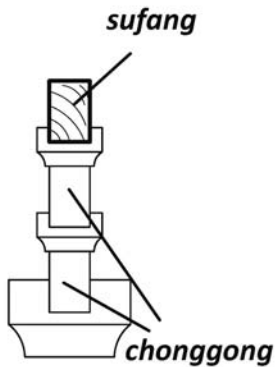
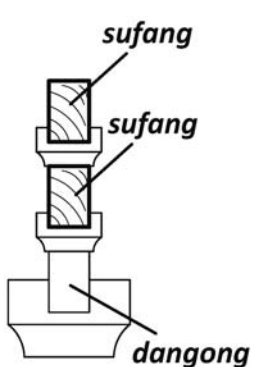
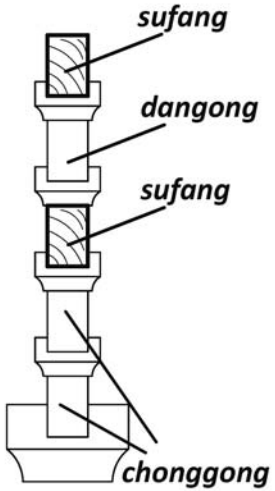
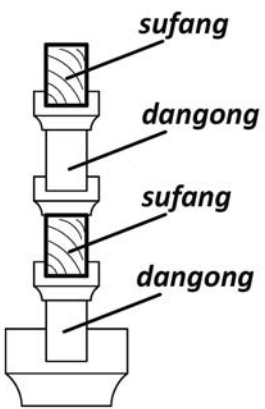
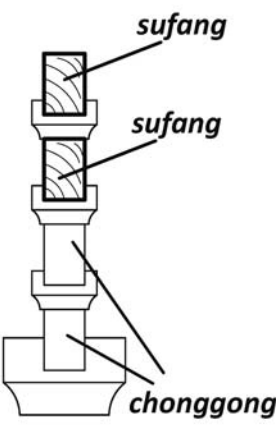
All <i>jixinzao</i> (with no <i>touxinzao</i> on <i>waitiao</i>)		First <i>tiao</i> built as <i>touxinzao</i>		
<i>chonggong jixinzao</i>	four- <i>puzuo</i> or <i>dangong jixinzao</i>	five- <i>puzuo</i>	six- <i>puzuo</i> or seven- <i>puzuo</i>	
				
Type A	Type B	Type C	Type D	Type E

Figure 3.2g *Fubigong* of Song Buildings in Jiangnan



Building	Date	Capital Set	<i>Fubigong</i> Type in <i>Yingzao fashi</i>
The Main Hall of Baoguosi	1013	<p>seven-puzuo</p>	<p>Type D</p>
The Main Hall of Baoshengsi	1073	<p>five-puzuo</p>	<p>Type C</p>
Sanqingdian of Xuanmiaoguan (upper eave)	1179	<p>seven-puzuo</p>	<p>Type E</p>
Sanqingdian of Xuanmiaoguan (lower eave)	1179	<p>four-puzuo</p>	<p>Type B</p>



Figure 3.2h Fubigong of Yuan Buildings in Jiangnan

Building	Date	Capital Set	Fubigong Type in <i>Yingzao fashi</i>
The Main Hall of Yanfusi	1317	<p>six-puzuo</p>	<p>Type D</p>
The Main Hall of Tianningsi	1318	<p>six-puzuo</p>	<p>Type D</p>
Ershanmen of Yunyansi	1338	<p>four-puzuo</p>	<p>Type B</p>
The Main Hall of Xuanyuangong	Ming	<p>five-puzuo</p>	<p>Type A</p>
The Main Hall of Zhenrusi	Ming	<p>four-puzuo</p>	<p>Type B</p>

Figure 3.2i Comparison of *Fubigong* in Sichuan and in *Yingzao fashi*

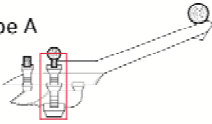

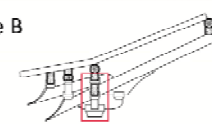
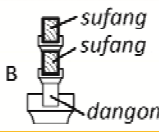
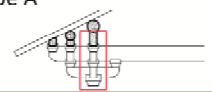

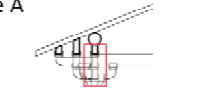
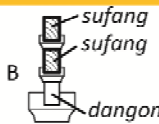
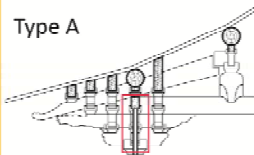
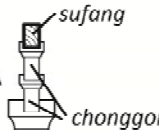
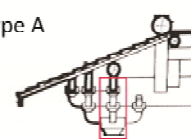
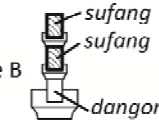
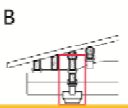
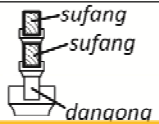
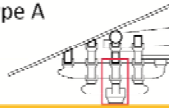
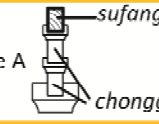
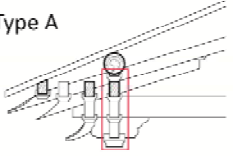

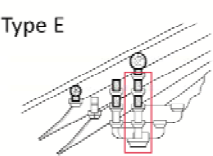
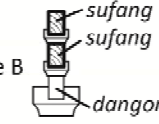
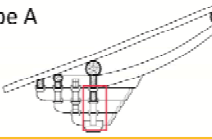

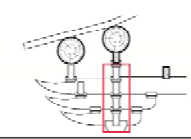
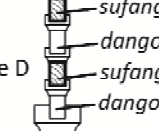
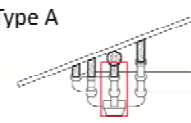
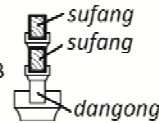
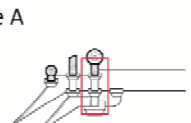
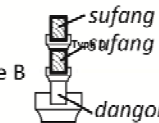
Building	Date	Fubigong	Assumed in <i>Yingzao fashi</i>	Building	Date	Capital Set	Assumed in <i>Yingzao fashi</i>
Feitianzangdian of Yunyansi	1181	Type A 	Type B  sufang sufang dangong	Pantuoshidian of Qiqushan damiao	Yuan	Type B 	Type B  sufang sufang dangong
The Main Hall of Lifengguan	1307	Type A 	Type B  sufang sufang dangong	Yong'anmiao	Yuan	Type A 	Type B  sufang sufang dangong
Feilaidian of Dongyuanmiao	1327	Type A 	Type A  sufang chonggong	Pingxianglou of Jianghouci	Yuan	Type A 	Type B  sufang sufang dangong
The Main Hall of Bao'ensi	1327	Type B 	Type B  sufang sufang danaona	Xiangdian of Dongyuemiao	1391	Type A 	Type A  sufang chonggong
The Main Hall of Yong'ansi	1333	Type A 	Type B  sufang sufang dangong	The Main Hall of Guanwangmiao	Ming	Type E 	Type B  sufang sufang dangong
Wenchangdian of Wulongmiao	1343	Type A 	Type A  sufang chonggong	The Main Hall of Doukousi	Ming		Type D  sufang dangong sufang dangong
The Main Hall of Qinglongsi	Yuan	Type A 	Type B  sufang sufang dangong	The Main Hall of Dubaisi	Ming	Type A 	Type B  sufang sufang dangong

Figure 3.2j *Dancai* and *zucai huagong* in Song Buildings in Jiangnan



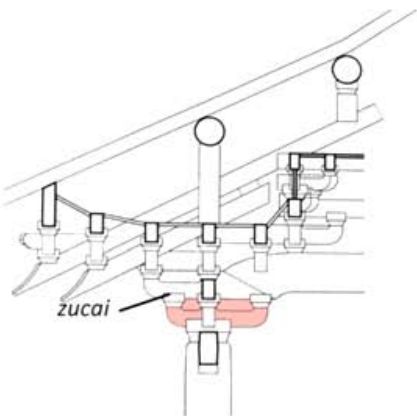
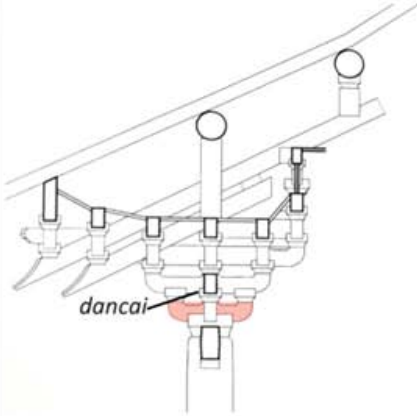
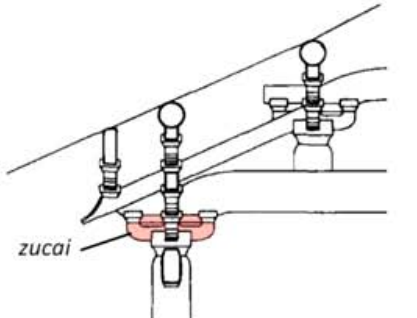
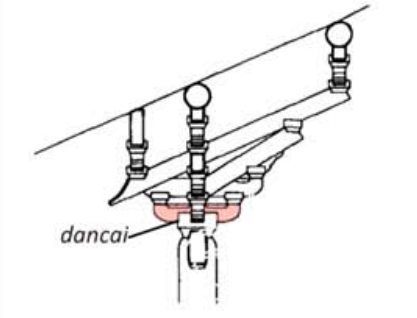
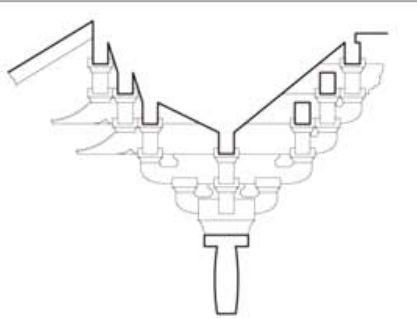
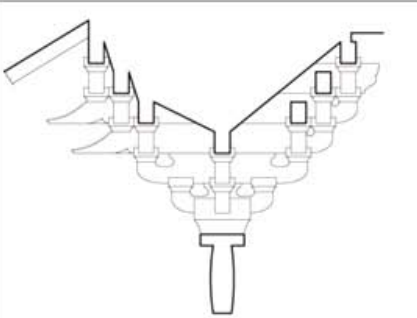
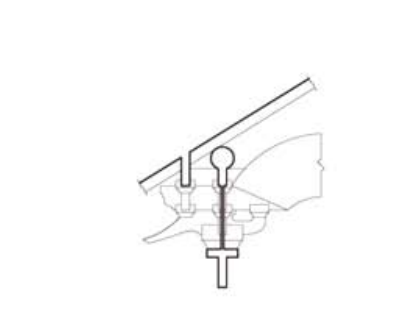
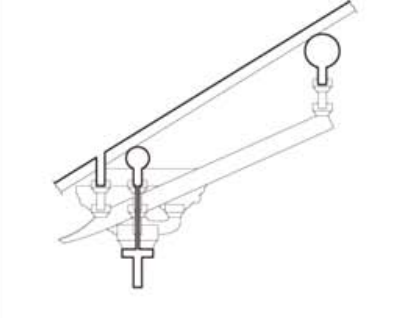
Building	Date	Capital Set	Intercolumnar Set
The Main Hall of Baogوسي	1013		
The Main Hall of Baoshengsi	1073		
Sanqingdian of Xuanmiaoguan (upper eave)	1179		
Sanqingdian of Xuanmiaoguan (lower eave)	1179		







Figure 3.2k Huagong of zucai or dancai of Yuan Buildings in Jiangnan



Building	Date	Capital Set	Intercolumnar Set
The Main Hall of Yanfusi	1317		
The Main Hall of Tianningsi	1318		
Ershanmen of Yunyansi	1338		
The Main Hall of Xuanyuangong	Ming		
The Main Hall of Zhenrusi	Ming		

Figure 3.2l *Xiegong* in Sichuan



Building	Date	Bracket Set with <i>Xiegong</i>	Note
Main Hall of Bao'ensi	1327		<i>xiegong</i> only employed in the center intercolumnar set
Wenchangdian of Wulongmiao	1343		<i>xiegong</i> employed both in capital and intercolumnar set
Main Hall of Qinglongsi	Yuan		<i>xiegong</i> employed in the side intercolumnar sets in <i>mingjian</i>
Yong'anmiao	Yuan		<i>xiegong</i> employed both in capital and intercolumnar set
Main Hall of Guanwangmiao	Ming		<i>xiegong</i> employed both in capital and intercolumnar set
Main Hall of Doukousi	Ming		<i>xiegong</i> employed both in capital and intercolumnar set

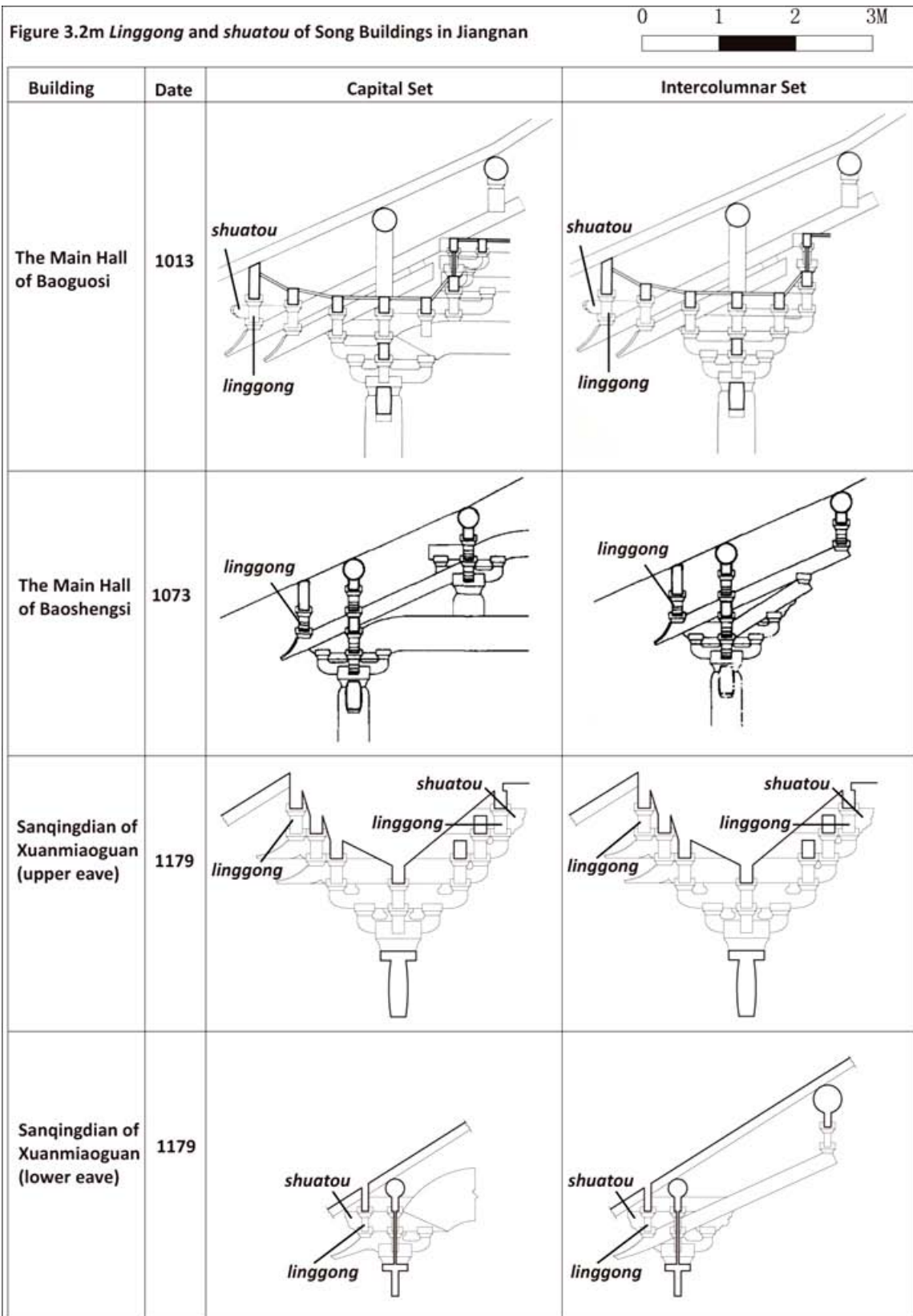
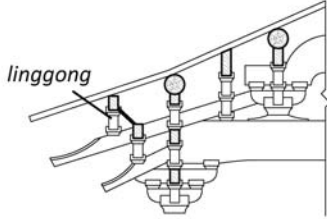
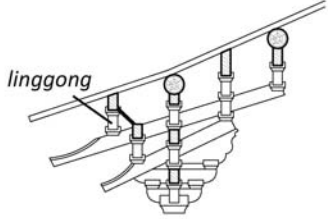
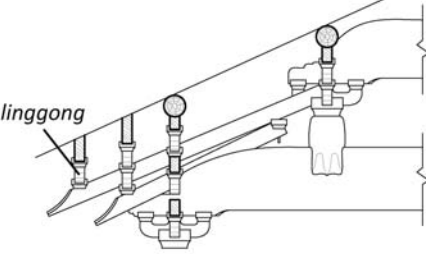
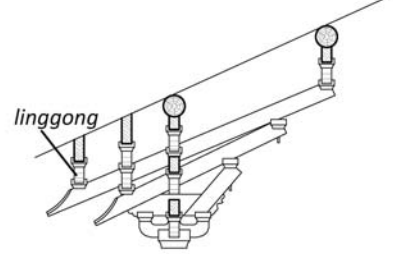

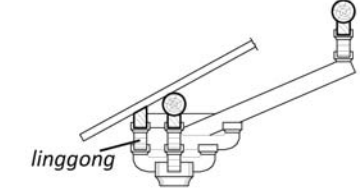
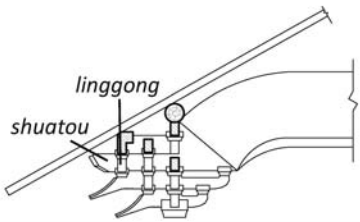
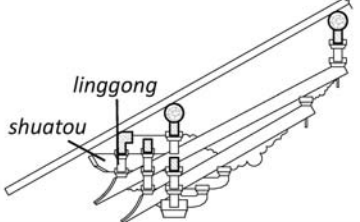
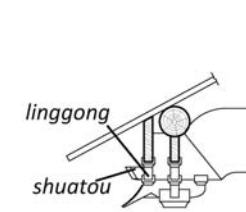
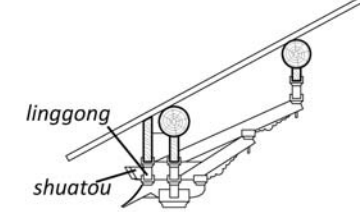
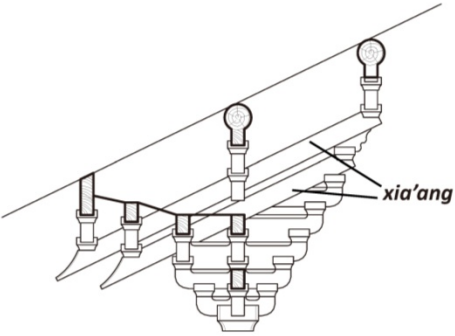
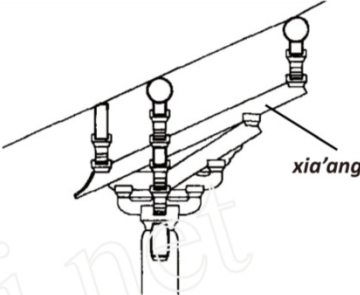
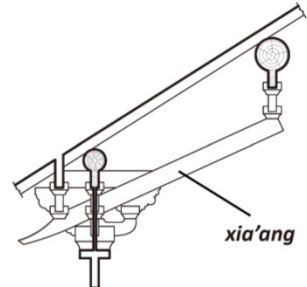
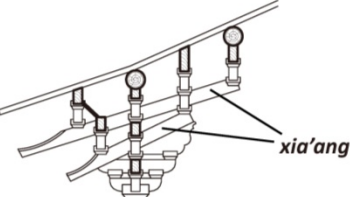
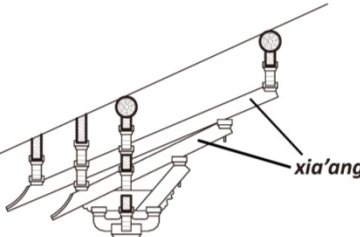
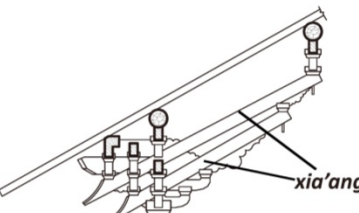

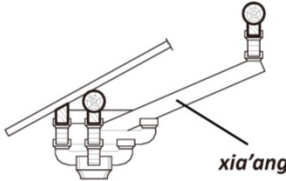
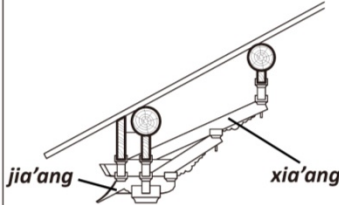


Figure 3.2n Bracket sets of Yuan Buildings in Jiangnan



Building	Date	Capital Set	Intercolumnar Set
The Main Hall of Yanfusi	1317		
The Main Hall of Tianningsi	1318		
Ershanmen of Yunyansi	1338		
The Main Hall of Xuanyuangong	Ming		
The Main Hall of Zhenrusi	Ming		

<i>angwei tiaowo</i>	The Main Hall of Baoguosi (1013)	The Main Hall of Baoshengsi (1073)	Sanqingdian of Xuanmiaoguan (lower eave)
			
	The Main Hall of Yanfusi (1317)	The Main Hall of Tianningsi (1318)	The Main Hall of Xuanyuangong (Ming)
<i>angting tiaowo</i>			
	Ershanmen of Yunyansi(1338)	The Main Hall of Zhenrusi (Ming)	<p>Figure 3.2o <i>Angwei tiaowo</i> and <i>angting tiaowo</i> in Jiangnan</p> 
			

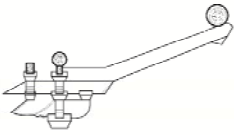
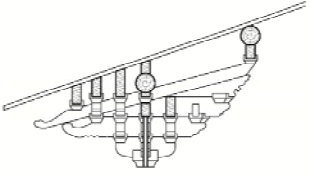
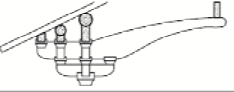
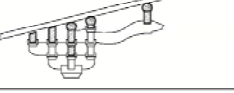
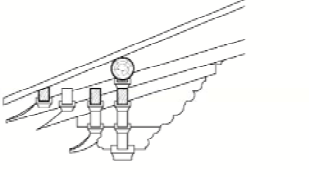
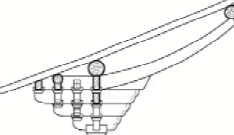
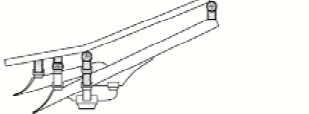
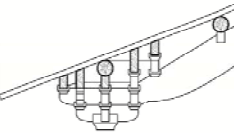
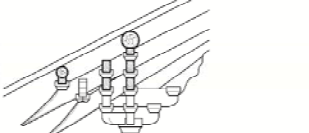
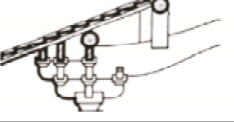
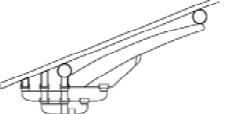
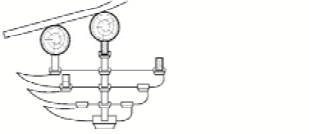
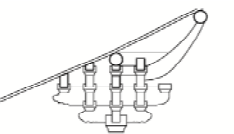
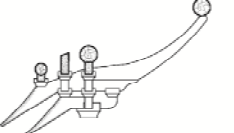
Building	Date	<i>angting tiaowo</i>	Building	Date	<i>angwei tiaowo</i>
Feitianzangdian of Yunyansi	1181		Feilaidian of Dongyuanmiao	1327	
The Main Hall of Lifengguan	1307				
The Main Hall of Bao'ensi	1327		The Main Hall of Yong'ansi	1333	
Wenchangdian of Wulongmiao	1343		Pantuoshidian of Qiqushan damiao	Yuan	
The Main Hall of Qinglongsi	Yuan		The Main Hall of Guanwangmiao	Ming	
Pingxianglou of Jianghouci	Yuan		Building	Date	None
Yong'anmiao	Yuan		The Main Hall of Doukousi	Ming	
Xiangdian of Dongyuemiao	1391				
The Main Hall of Dubaisi	Ming				

Figure 3.2p *Angwei tiaowo* and *angting tiaowo* in Sichuan



Figure 3.2q *Shang'ang* and *xuexie* in Jiangnan

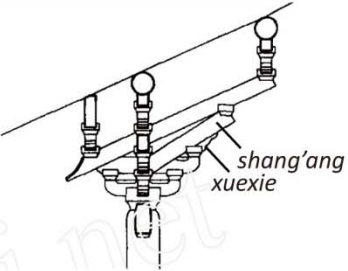
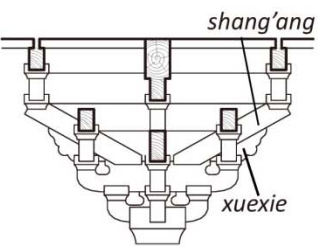
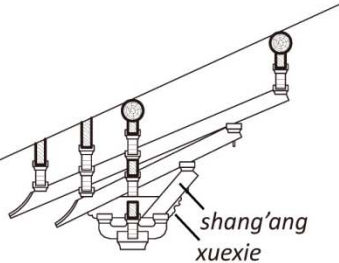
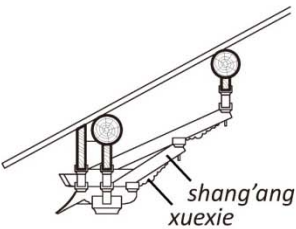
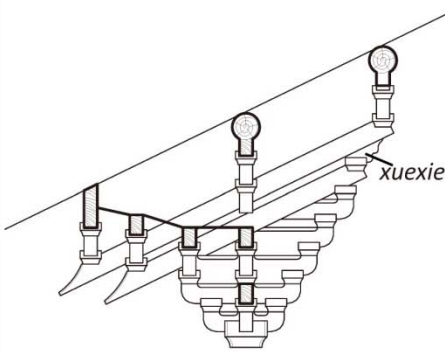
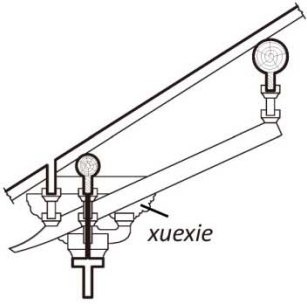
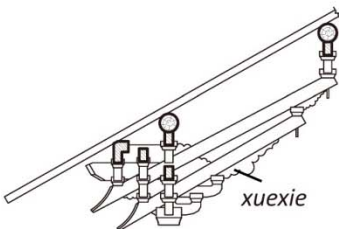
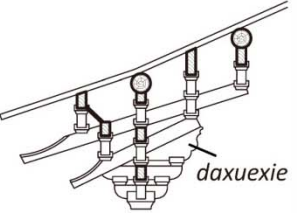
	The Main Hall of Baoshengsi (1073)	Sanqingdian of Xuanmiaoguan (upper eave, 1179)	The Main Hall of Tianningsi (1318)	The Main Hall of Zhenrusi (Ming)
<i>shang'ang</i>				
	The Main Hall of Baogusi (1013)	Sanqingdian of Xuanmiaoguan (lower eave) (Ming)	The Main Hall of Xuanyuangong (Ming)	The Main Hall of Yanfusi (1317)
<i>xuexie</i>				

Figure 3.2r *Xuexie* in Sichuan

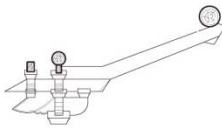
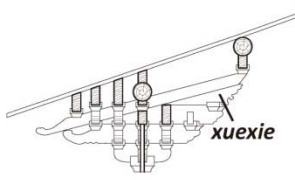
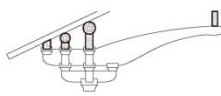
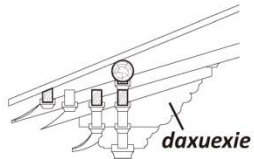
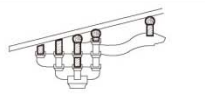
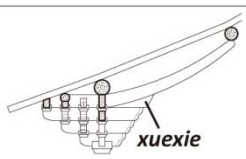
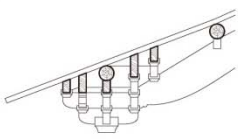
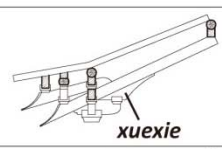
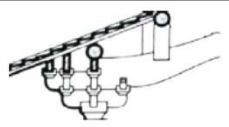
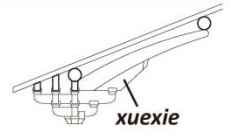
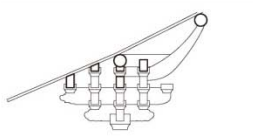
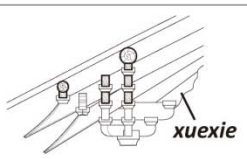
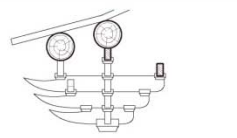
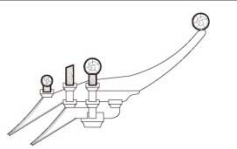
Building	Date	Bracket Sets Without <i>Xuexie</i>	Building	Date	Bracket Sets With <i>Xuexie</i>
Feitianzangdian of Yunyansi	1181		Feilaidian of Dongyuanmiao	1327	
The Main Hall of Lifengguan	1307		The Main Hall of Yong'ansi	1333	
The Main Hall of Bao'ensi	1327		Wenchangdian of Wulongmiao	1343	
The Main Hall of Qinglongsi	Yuan		Pantuoshidian of Qiqushan damiao	Yuan	
Pingxianglou of Jianghouci	Yuan		Yong'anmiao	Yuan	
Xiangdian of Dongyuemiao	1391		The Main Hall of Guanwangmiao	Ming	
The Main Hall of Doukousi	Ming				
The Main Hall of Dubaisi	Ming				

Figure 3.2s *Cha'ang* in Jiangnan



Building	Date	Capital Set	Intercolumnar Set
Sanqingdian of Xuanmiaoguan (lower eave)			
The Main Hall of Xuanyuangong	Ming		
The Main Hall of Zhenrusi	Ming		

Figure 3.2s *Cha'ang* in Jiangnan



Building	Date	Capital Set	Intercolumnar Set
Sanqingdian of Xuanmiaoguan (lower eave)			
The Main Hall of Xuanyuangong	Ming		
The Main Hall of Zhenrusi	Ming		

Figure 3.2u-1 Bracket Sets of the rear chamber in Tomb M1, Anbing Tombs
(Photograph after *Huaying Anbingmu*, 2008)



Figure 3.2u-2 Bracket Sets of the front chamber in Tomb M1, Anbing Tombs
(Photograph after *Huaying Anbingmu*, 2008)

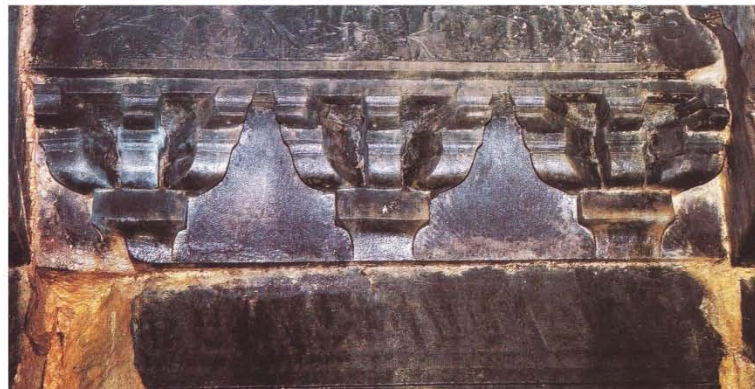


Figure 3.2u-3 Bracket Sets between the front and middle chambers
in Tomb M1, Anbing Tombs (Photograph after *Huaying Anbingmu*, 2008)

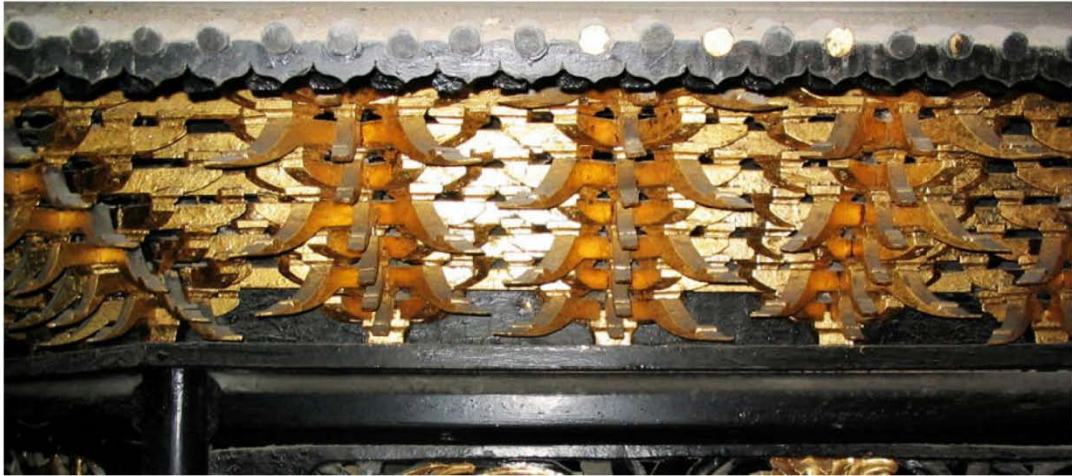


Figure 3.2v-1 *Xiegong* in Feitianzang

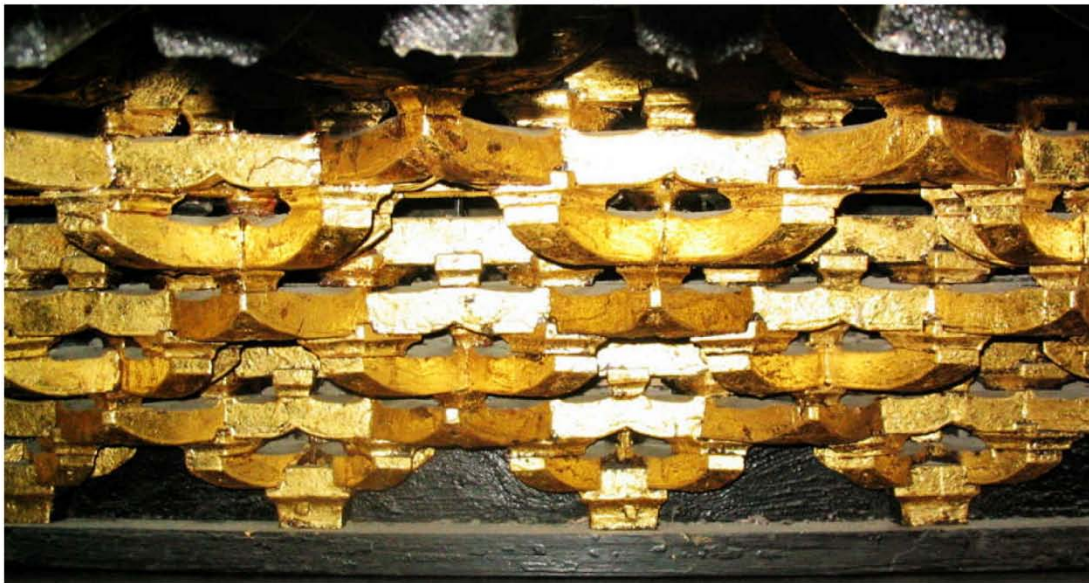


Figure 3.2v-2 *Xiegong* in Feitianzang



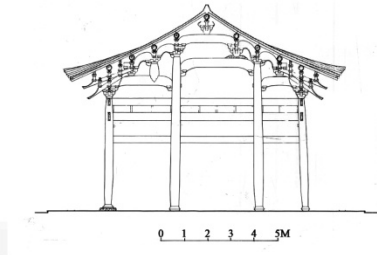
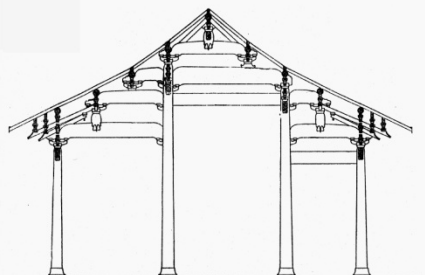
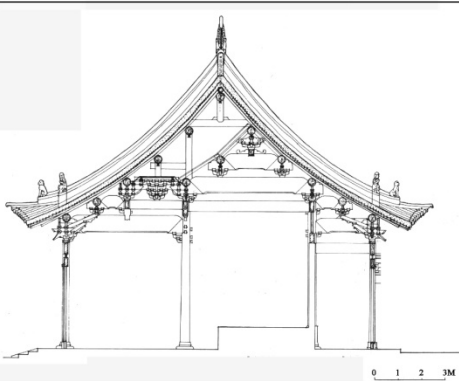
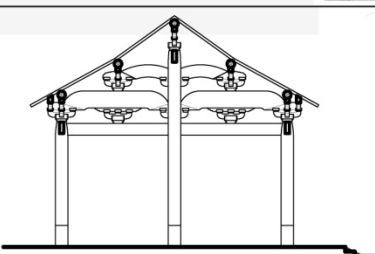
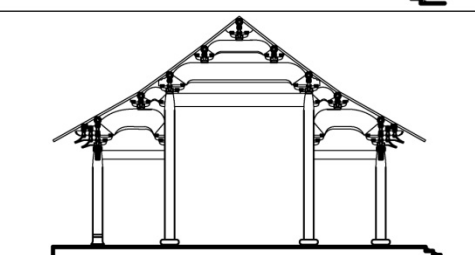
Figure 3.2w-1 *Ejiadong* in the Main Hall of Baoguosi

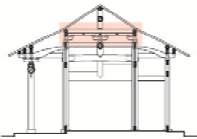
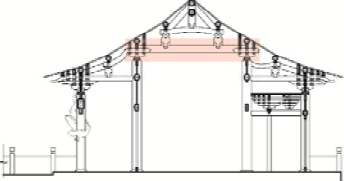
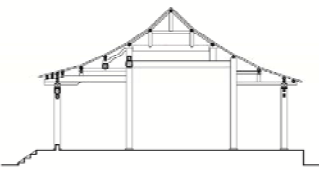
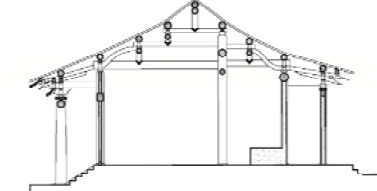
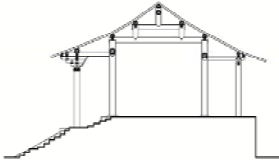
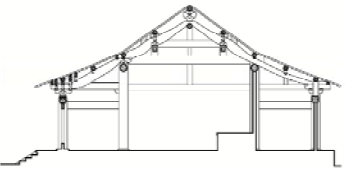
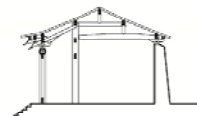
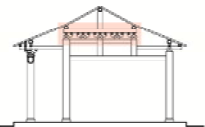
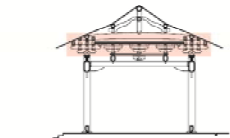

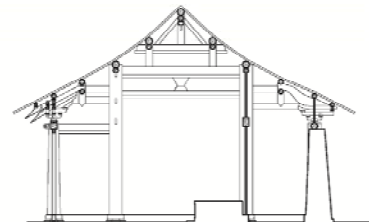
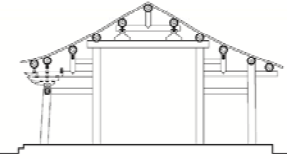


Figure 3.2w-2 *Ejiadong* in Ershanmen of Yunyansi



Figure 3.2w-3 *Ejiadong* in the Main Hall of Xuanyuangong

Figure 3.3a North-south sectional view of buildings in Jiangnan		
Building	Date	North-south sectional view
Main Hall of Yangfusi	1317	
Main Hall of Tianningsi	1318	
Main Hall of Zhenrusi	1320	
Ershanmen of Yunyansi	1338	
Main Hall of Xuanyuangong	Late Yuan	

The Main Hall of Lifengguan	Feilaidian of Dongyuemiao	The Main Hall of Bao'ensi
1307	1327	1327
		
The Main Hall of Yong'ansi	Wenchangdian of Wulongmiao	The Main Hall of Qinglongsi
1333	1343	Yuan
		
Pantuoshidian of Qiqushan damiao	Yong'anmiao	Xiangdian of Dongyuemiao
Yuan	Yuan	1391
		
The Main Hall of Guanwangmiao	The Main Hall of Doukousi	<p>Figure 3.3b Sectional views of the buildings in Sichuan</p> 
Early Ming	Early Ming	
		

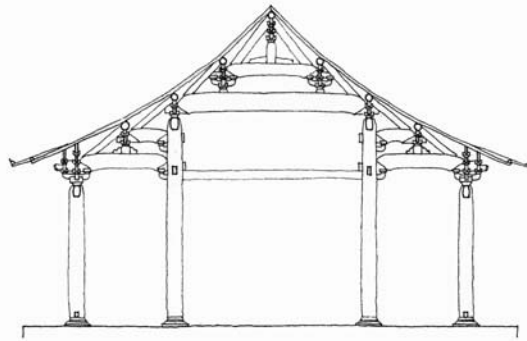


Figure 3.3c Roof structure of an eight-rafter building according to the *Yingzao fashi*

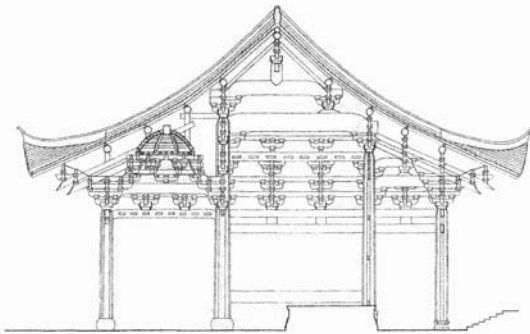


Figure 3.3d The Main Hall of Baoguosi

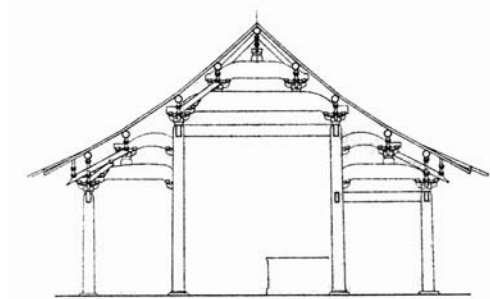


Figure 3.3e The Main Hall of Baoshengsi

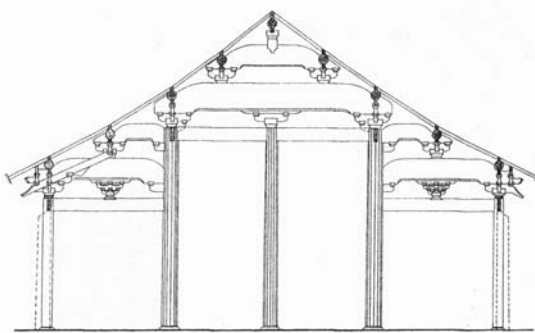


Figure 3.3f Jingangdian of Tianningsi(Nantong)

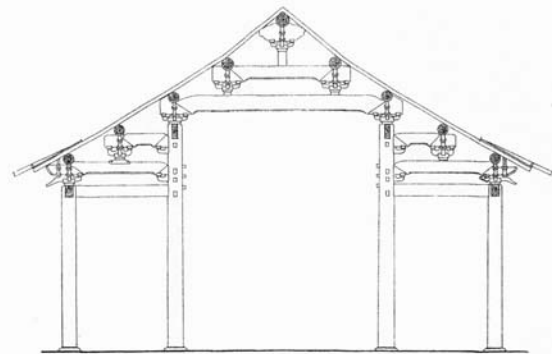
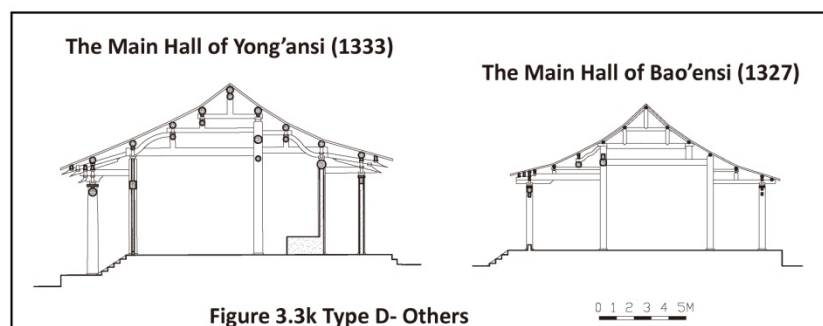
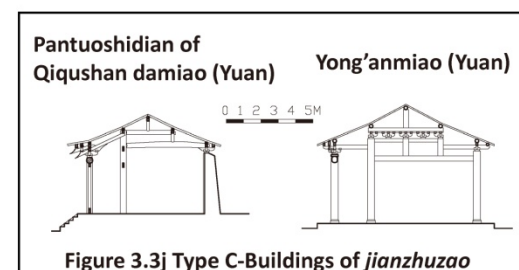
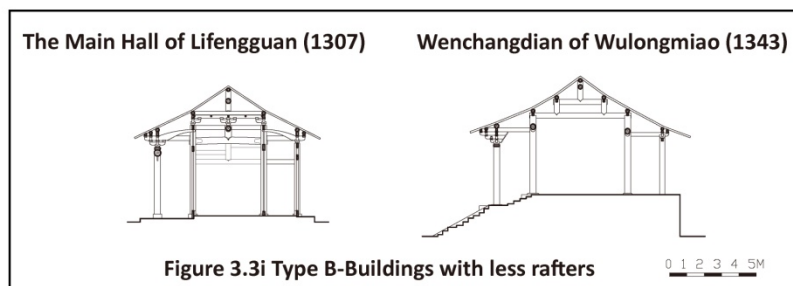
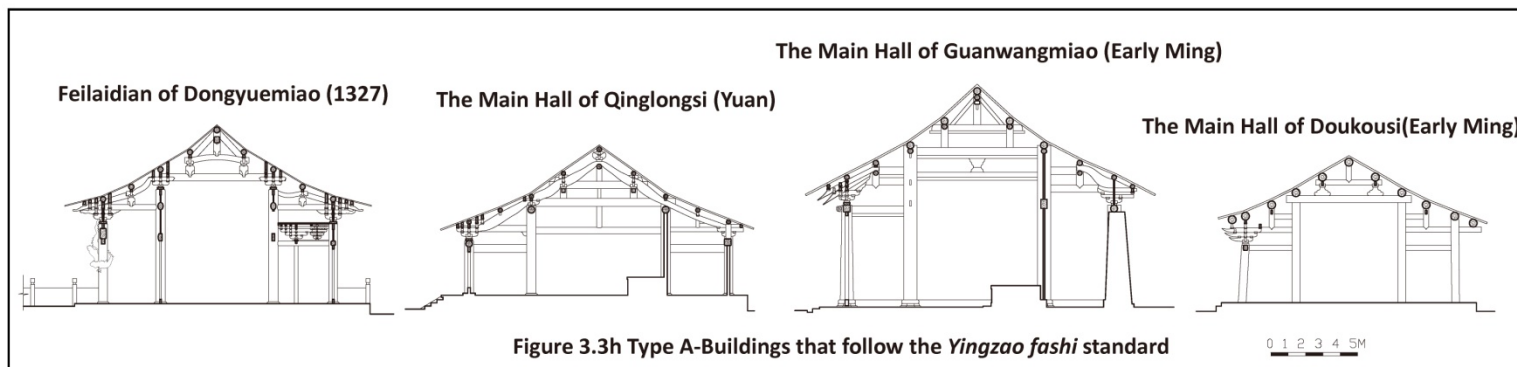
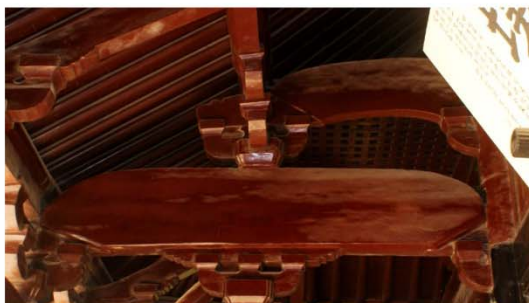
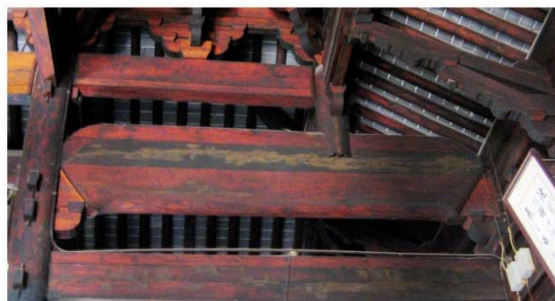
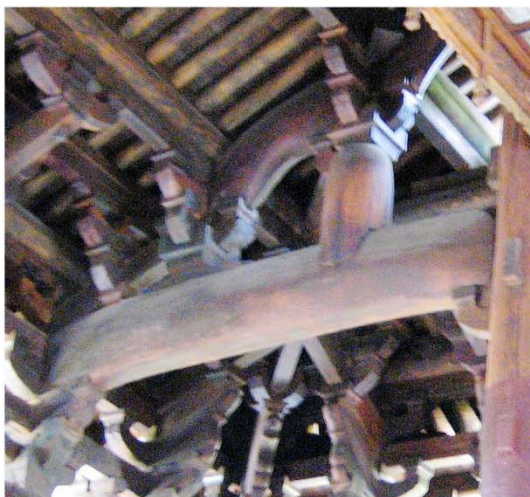


Figure 3.3g Yanzi xiangdian





1	2
	3
5	4

Figure 3.3I-

1. Three-rafter and one-rafter moon-shaped beams of the Main Hall of Yanfusi
2. Two-rafter and one-rafter moon-shaped beams of the Main Hall of Tianningsi
3. Three-rafter moon-shaped beams of the Main Hall of Zhenrusi
4. Two-rafter and one-rafter moon-shaped beams of Ershanmen
5. Two-rafter moon-shaped beam of the Main Hall of Xuanyuangong



Figure 3.3m-

1. Two-rafter beam in Feilaidian
2. One-rafter beam in the Main Hall of Yong'ansi
3. Two-rafter T-beam in the Main Hall of Dubaisi
4. Four-rafter beam in Xiangdian
5. One-rafter beam in Wenchangdian of Wulongmiao
6. One-rafter in the Main Hall of Lifengguan
7. Three-rafter beam in the Main Hall of Bao'ensi
8. Three-rafter beam in Pantuoshidian

1	2	3
4	5	6
7		
8		



9	
10	11
12	13
	14

Figure 3.3m-

9. Two-rafter T beam in the Main Hall of Qinglongsi

10. Two-rafter beam of Pingxianglou

11. One-rafter beam of Yong'anmiao

12&13. Two-rafter beam in the Main Hall of Doukousi

14. Two-rafter beam of the Main Hall of Guanwangmiao

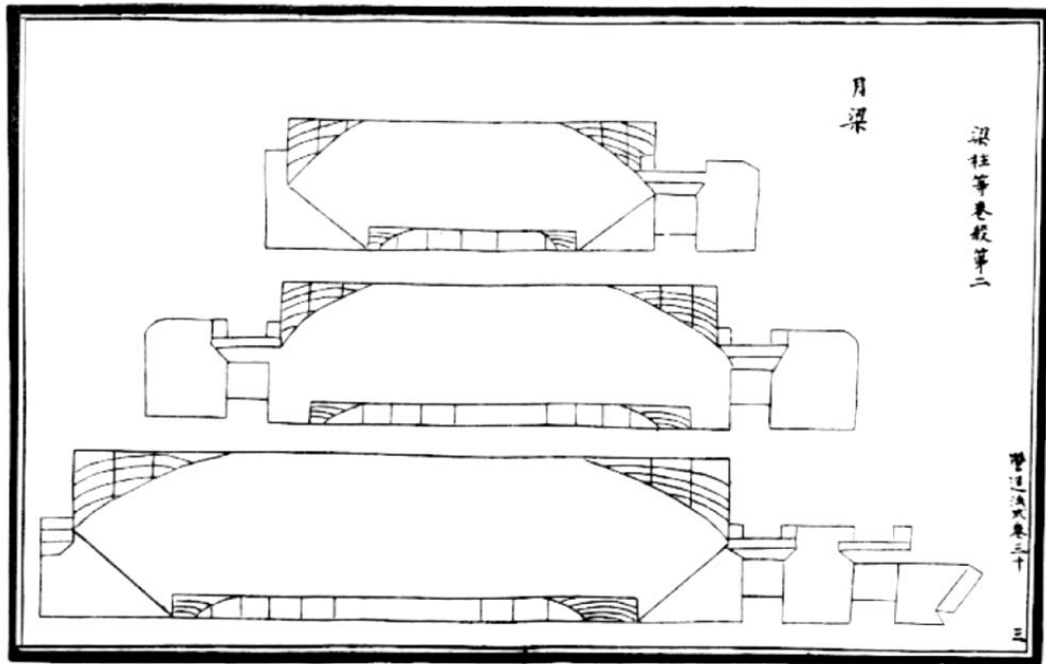
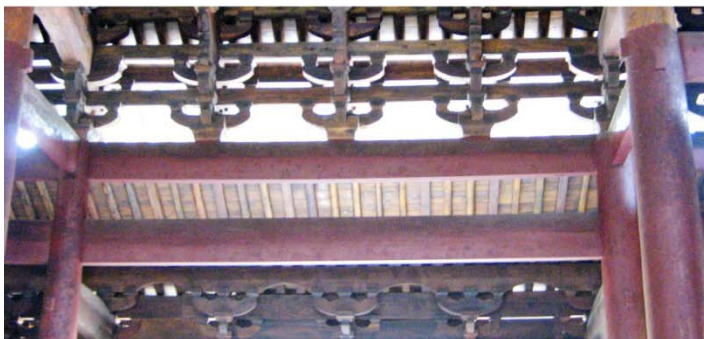


Figure 3.3n Illustration of Yueliang in the Yingzao fashi (from *Liang Sicheng wenji*, juan 7,438)



1	2
3	4

Figure 3.3o

1. *lan'e* and *you'e* in the Main Hall of Yanfusi
2. *lan'e* in the Main Hall of Tianningsi
3. *lan'e* in Ershanmen
4. *lan'e* and *pupaifang* in the Main Hall of Xuanyuangong

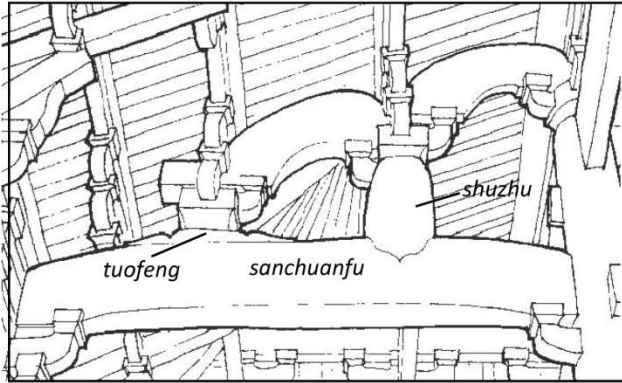
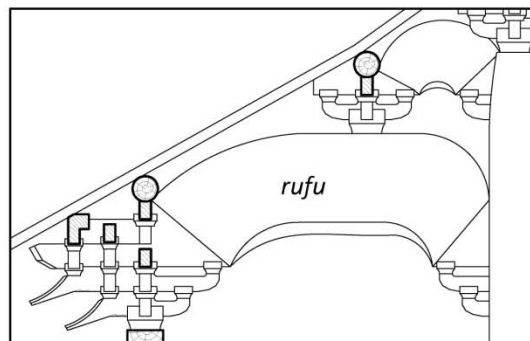
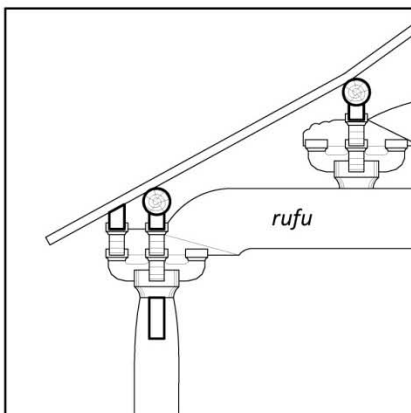
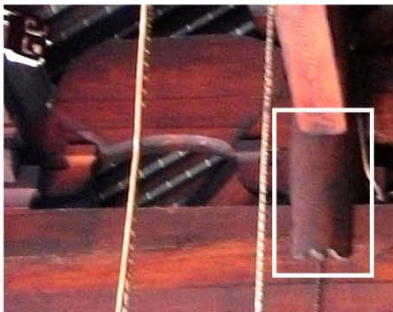
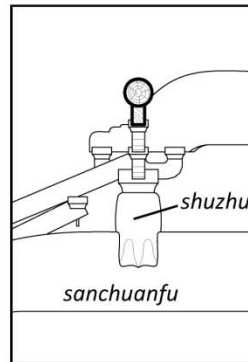
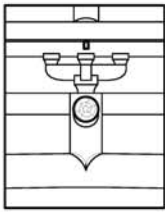
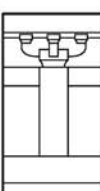
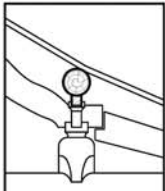

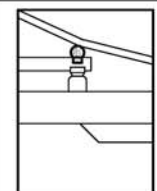
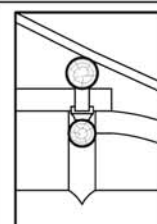

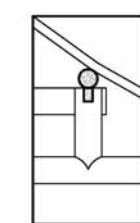
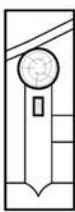
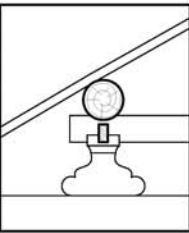
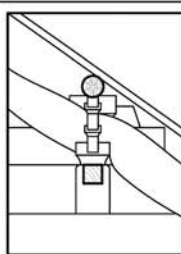
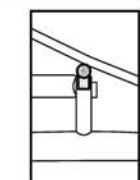



Figure 3.3p *shuzhu* and *tuofeng* in Jiangnan

1. *tuofeng* and *shuzhu* im Main Hall of Yanfusi
2. *tuofeng* in Main Hall of Tianningsi
3. *shuzhu* in Main Hall of Tianningsi
4. *shuzhu* in Main Hall of Zhenrusi
5. *tuofeng* in Main Hall of Zhenrusi
6. *rufu* in Ershanmen
7. *rufu* in Main Hall of Xuanyuangong

1	
2	3
4	5
6	7



Building	Date	Shuzhu	Building	Date	Shuzhu	Tuofeng
Lifengguan	1307		Yong'anmiao	Yuan		
Feilaidian	1327		Pingxianglou	Yuan		
Bao'ensi	1327		Xiangdian	1391		
Yong'ansi	1333		Guanwangmiao	Ming		
Wulongmiao	1343		Doukousi	Ming		
Qinglongsi	Yuan		Dubaisi	Ming		
Pantuoshidian	Yuan		 <p>Figure 3.3q <i>Shuzhu</i> and <i>tuofeng</i> in Sichuan</p>			

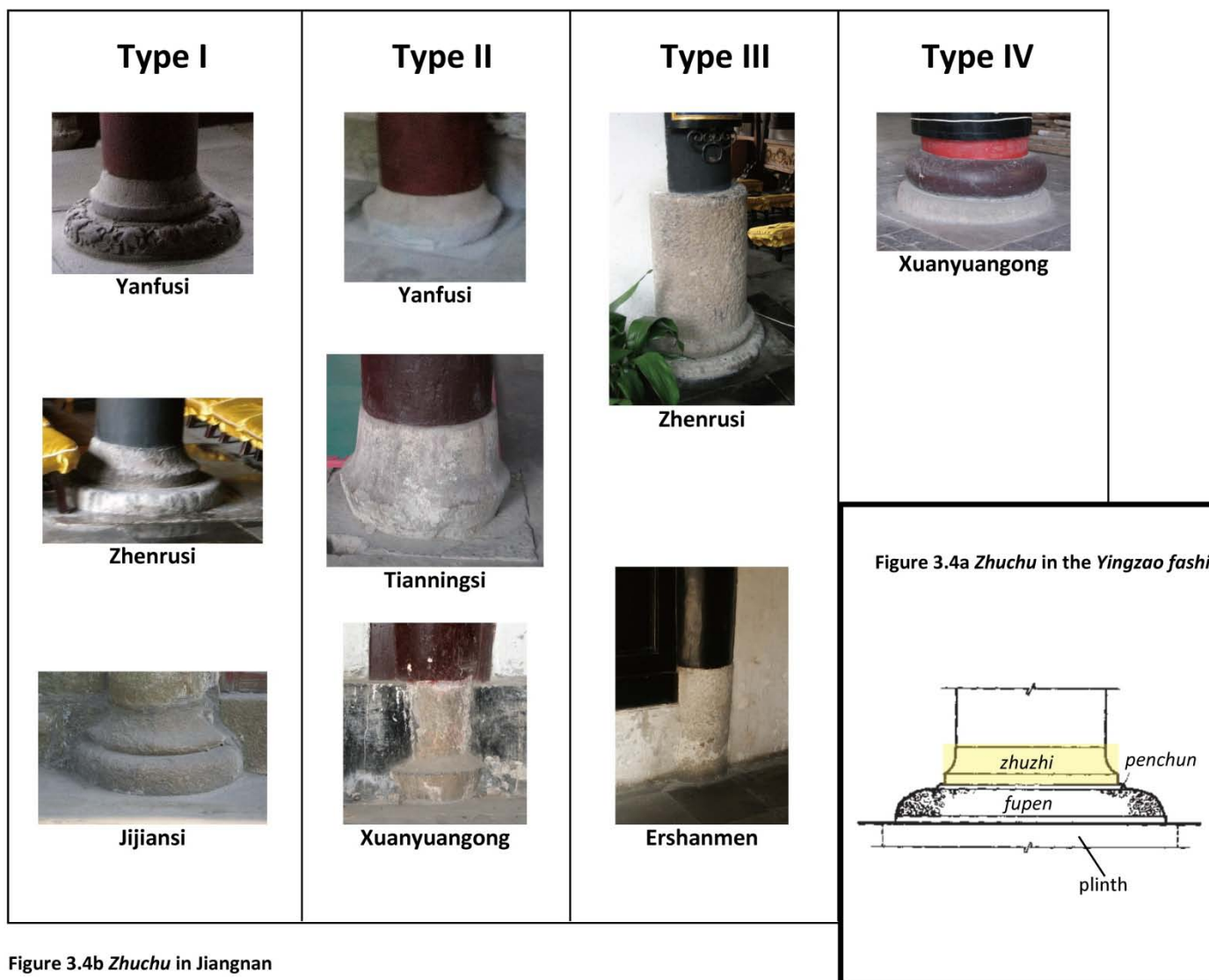


Figure 3.4b Zhuchu in Jiangnan

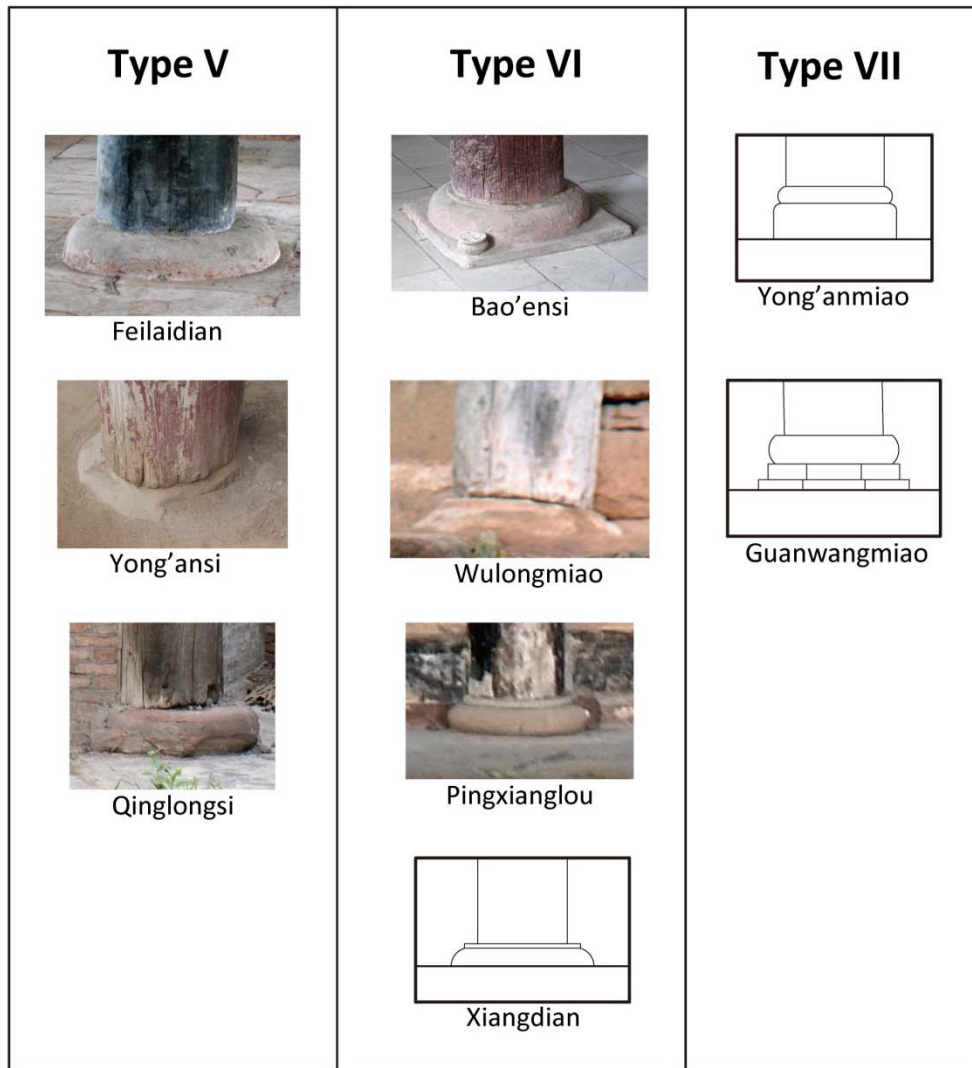
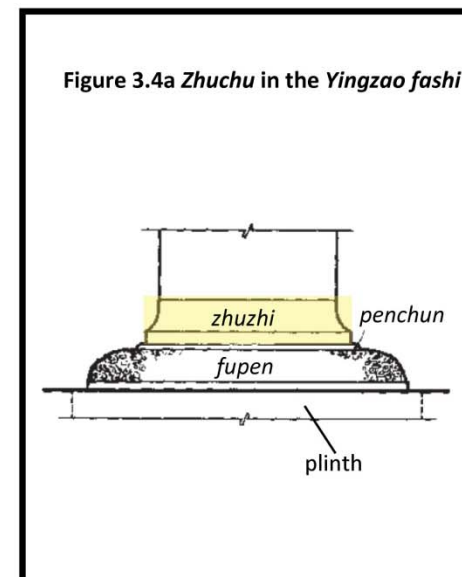


Figure 3.4c Zhuchu in Sichuan





1.Yanfusi



2. Tianningsi



3.Xuanyuangong

Figure 3.4d *Suozhu* in Jiangnan

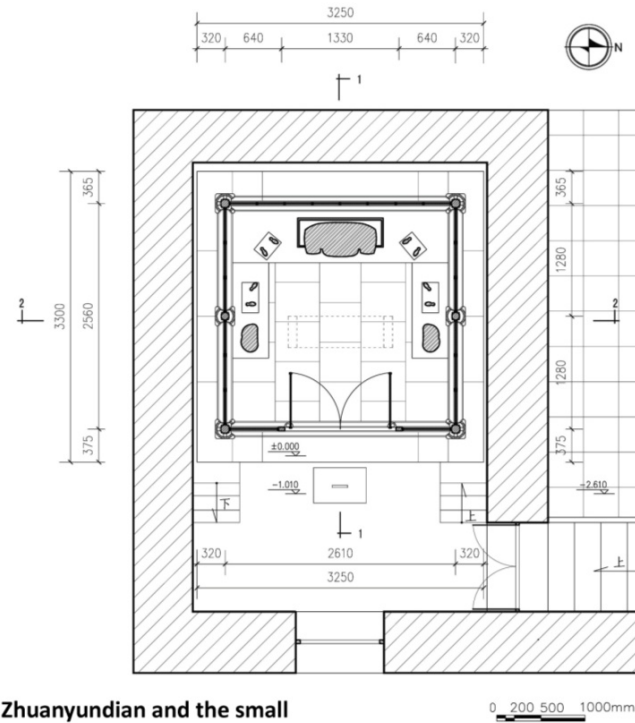


Figure 4.1a Layout of Zhuanyundian and the small copper hall at Wudang Mountains (by Zhang Jianwei)

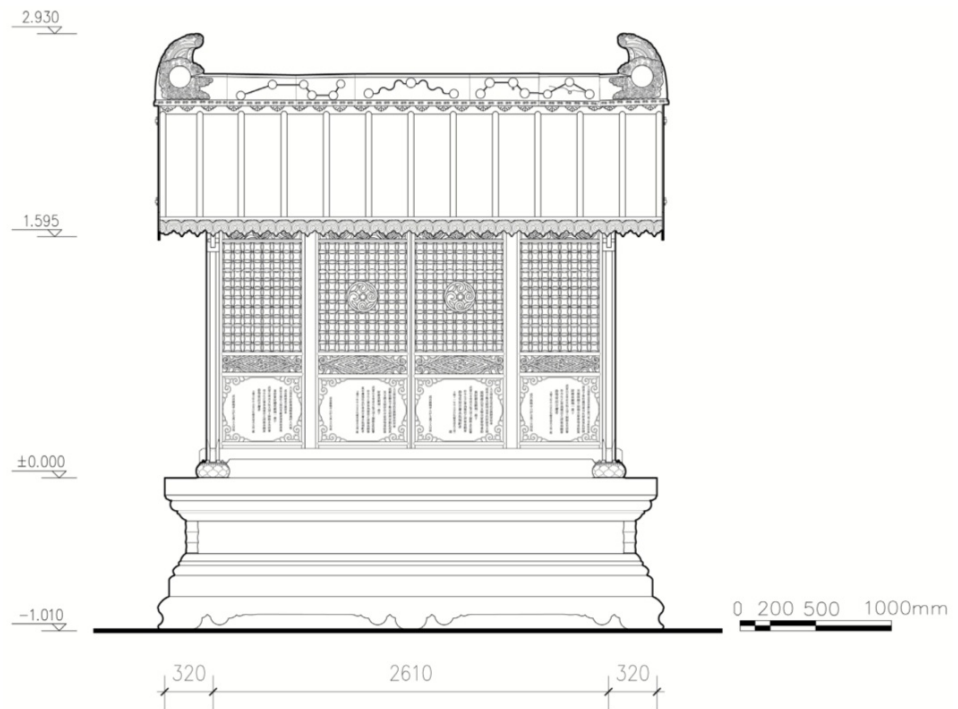


Figure 4.1b Facade of the small copper hall at Wudang Mountains (by Zhang Jianwei)

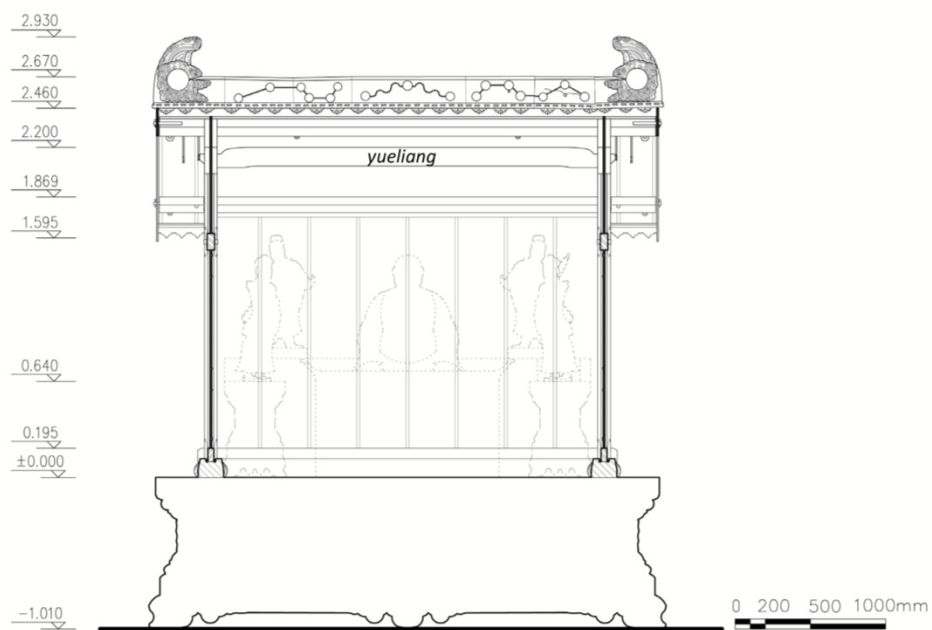


Figure 4.1c North-south sectional view of the small copper hall at Wudang Mountains(by Zhang Jianwei)

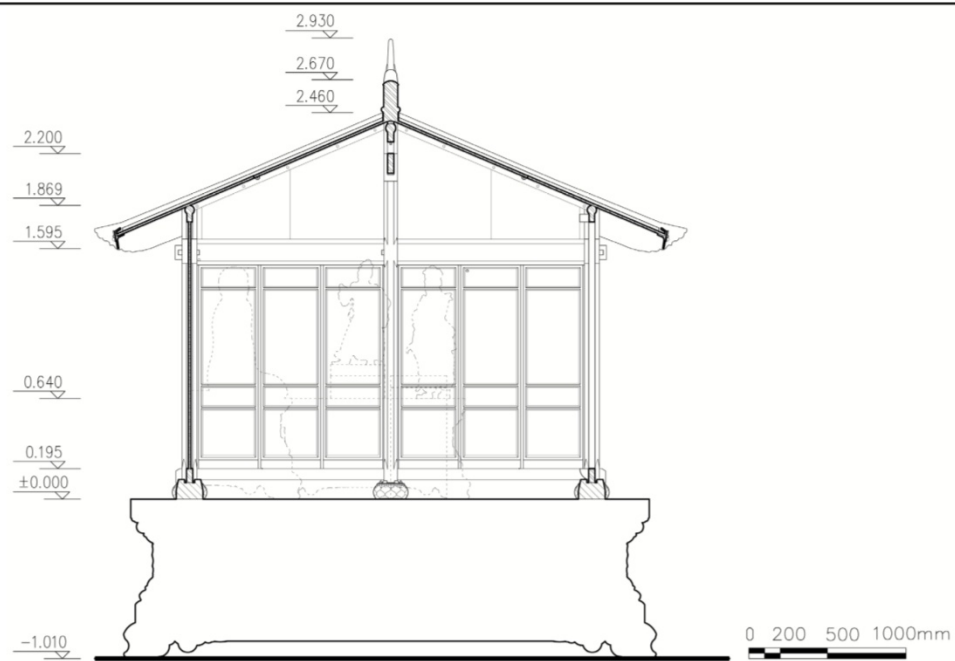


Figure 4.1d East-west sectional view of the small copper hall at Wudang Mountains (by Zhang Jianwei)

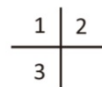
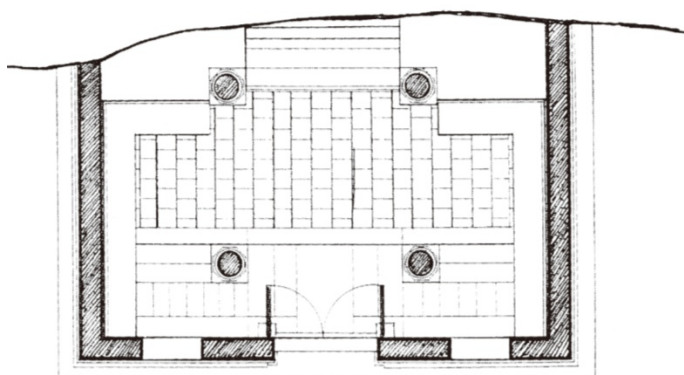
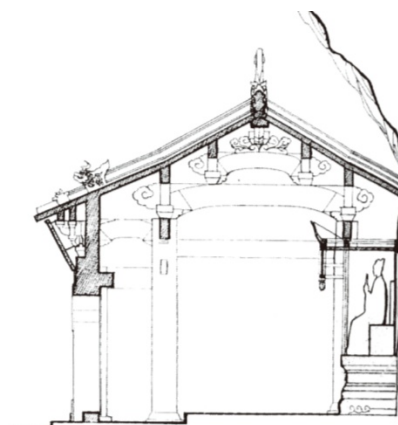
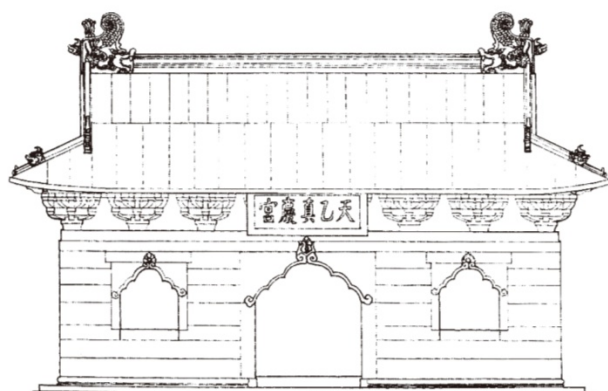


Figure 4.1e Tianyizhenqinggong, Wudangshan (after *Hubei gudai jianzhu*)
 1. Facade 2. East-west Sectional View 3. Plan

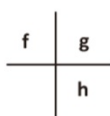


Figure 4.1f Outer building of Tianyi zhenqing gong

Figure 4.1g Yueliang and shunfuchuan of Tianyi zhenqing gong

Figure 4.1h Chandu chuomu of Tianyi zhenqing gong



1	2
3	4

Figure 4.1i 1-4
Bracket sets of Tianyi zhenqing gong



Figure 4.1j Intercolumnar set of
Main Hall of Qinglongsi



Figure 4.1k Bracket set of Yong'anmiao



1	2
3	4



Figure 4.1l *Xiaoshidian* at Wudangshan

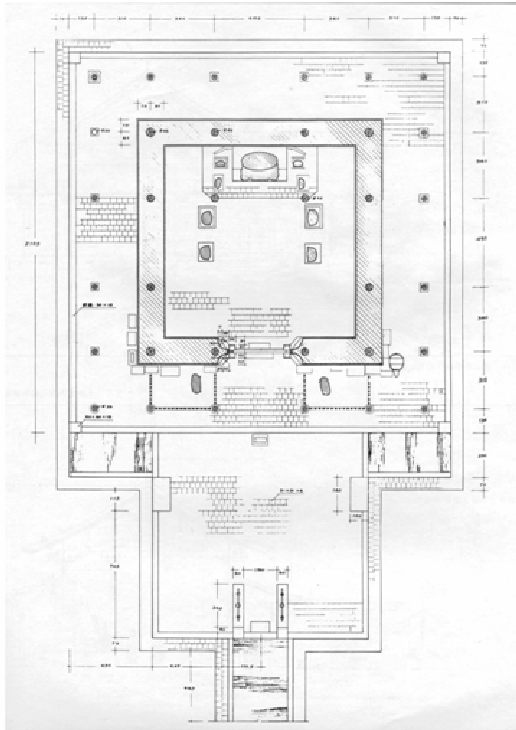
1. Facade
2. Corner
3. Front entrance
4. Side elevation



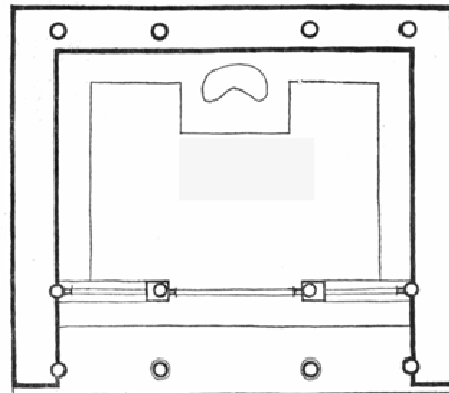
Figure 4.1m The Gate House of Lexutang, Hongcun, Anhui (1403)

1. *Xiegong* in the bracket set on front eave column
2. moon-shaped *lan'e* in *mingjian*
3. *dingtougong* on *shuzhu* above *pingliang*
4. wooden *zhuzhi*
5. appearance of the Gate House of Lexutang
6. moon-shaped *wunei'e*

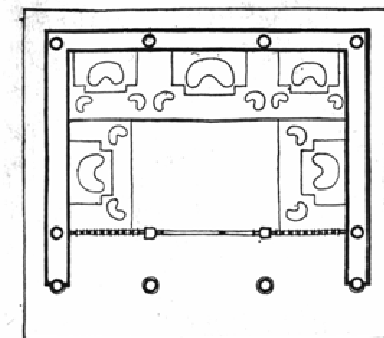
1	2	3
4	5	6



Plan of Mingyingwangdian of Shuishengmiao, in Lower Guangshengsi
(after *Hongdong Guangshengsi*)

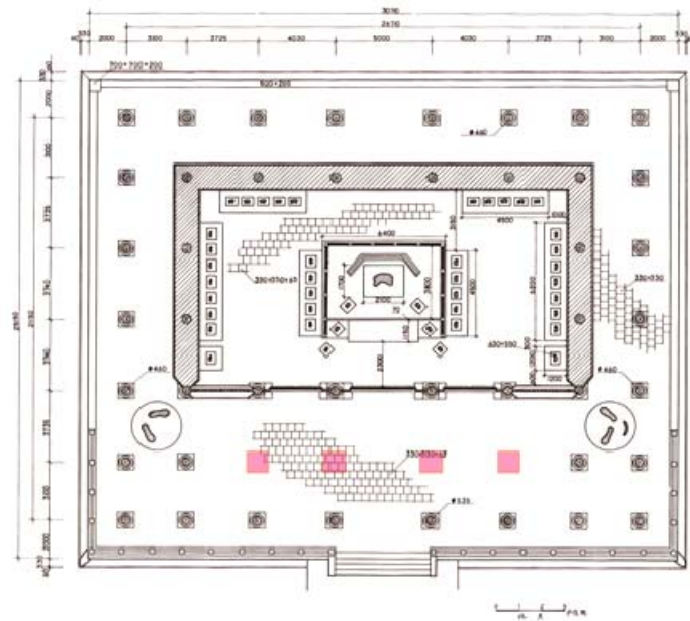


Plan of the Main Hall of Erlangmiao, Pingyao
(after Zhang Yuhuan, 1979)

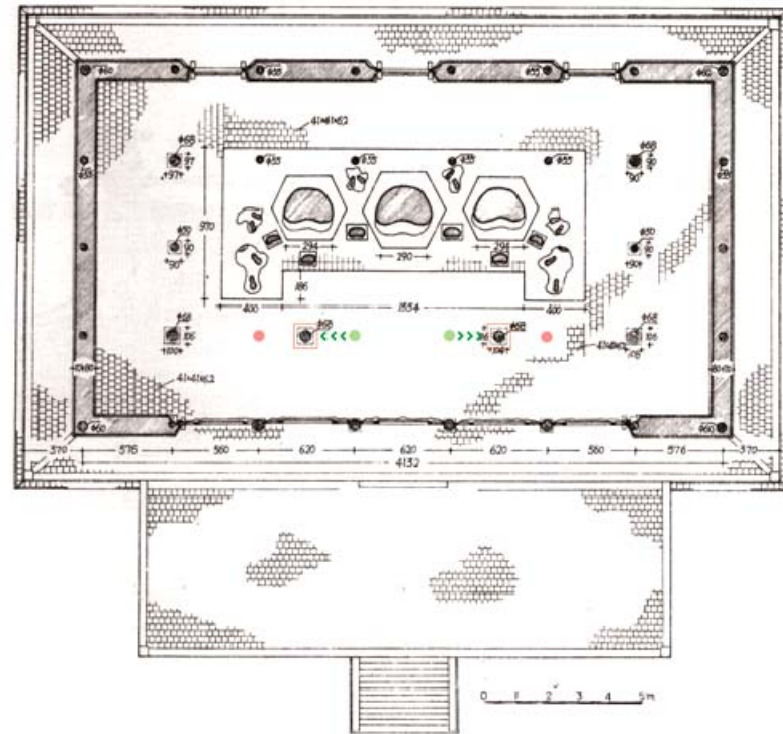


Plan of the Main Hall of Longtianmiao, Jiexiu
(after Zhang Yuhuan, 1979)

Figure 4.2c *Jianzhuzao* and *yizhuzao* in Song and Jin architecture in Shanxi

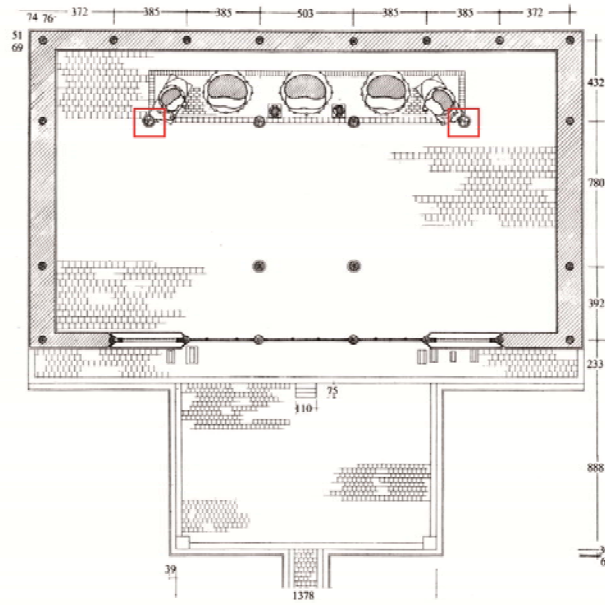


1. Shengmudian of Jin Shrine, Taiyuan, Shanxi
(After Chai Zejun, *Taiyuan Jinci Shengmudian xiushan gongcheng baogao*)

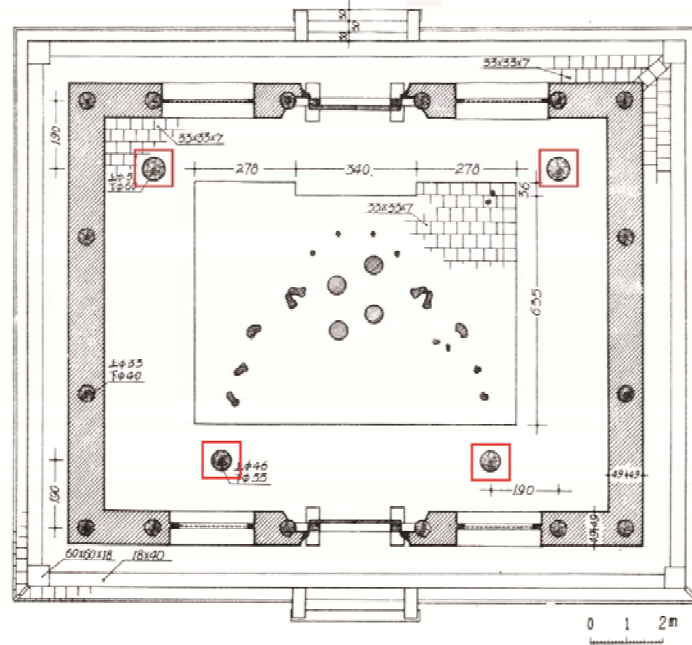


2. Mituodian of Chongfusi, Shuozhou, Shanxi (After Chai Zejun, *Shuozhou Chongfusi*)

Figure 4.2d *Jianzhuzao* and *yizhuzao* in Yuan architecture in Shanxi



Main Hall of Lower Guangshengsi, Hongdong, Shanxi
(After Chai Zejun, *Hongdong Guangshengsi*)



Wenshudian of Yanshansi, Fanshi, Shanxi (After Chai Zejun, *Fanshi yanshansi*)

Figure 4.2e *Xiegong* of Song, Jin and Yuan periods



1. Monidian of Longxingsi (Song), Zhengding, Hebei



2. Mituodian of Chongfusi (Jin), Shuozhou, Shanxi



3. Sanshengdian of Shanhuasi (Jin), Datong, Shanxi



4. Mingyingwangdian of Shuishenmiao at Guangshengsi (Yuan), Hongdong, Shanxi (After Chai Zejun, *Hongdong Guangshengsi*)



5. Guanwangmiao (Yuan), Dingxiang, Shanxi

Figure 4.2f *Yatiao* in Shanxi



Yatiao and *sichuanfu*, Mingyingwangdian of Shuishenmiao at Guangshengsi (Yuan), Hongdong, Shanxi
(After Chai Zejun, *Hongdong Guangshengsi*)



Yatiao and *sichuanfu*, Chuanfa zhengzongdian of Yong'ansi, Hunyuan, Shanxi

Figure 4.2g *Yixinggong*

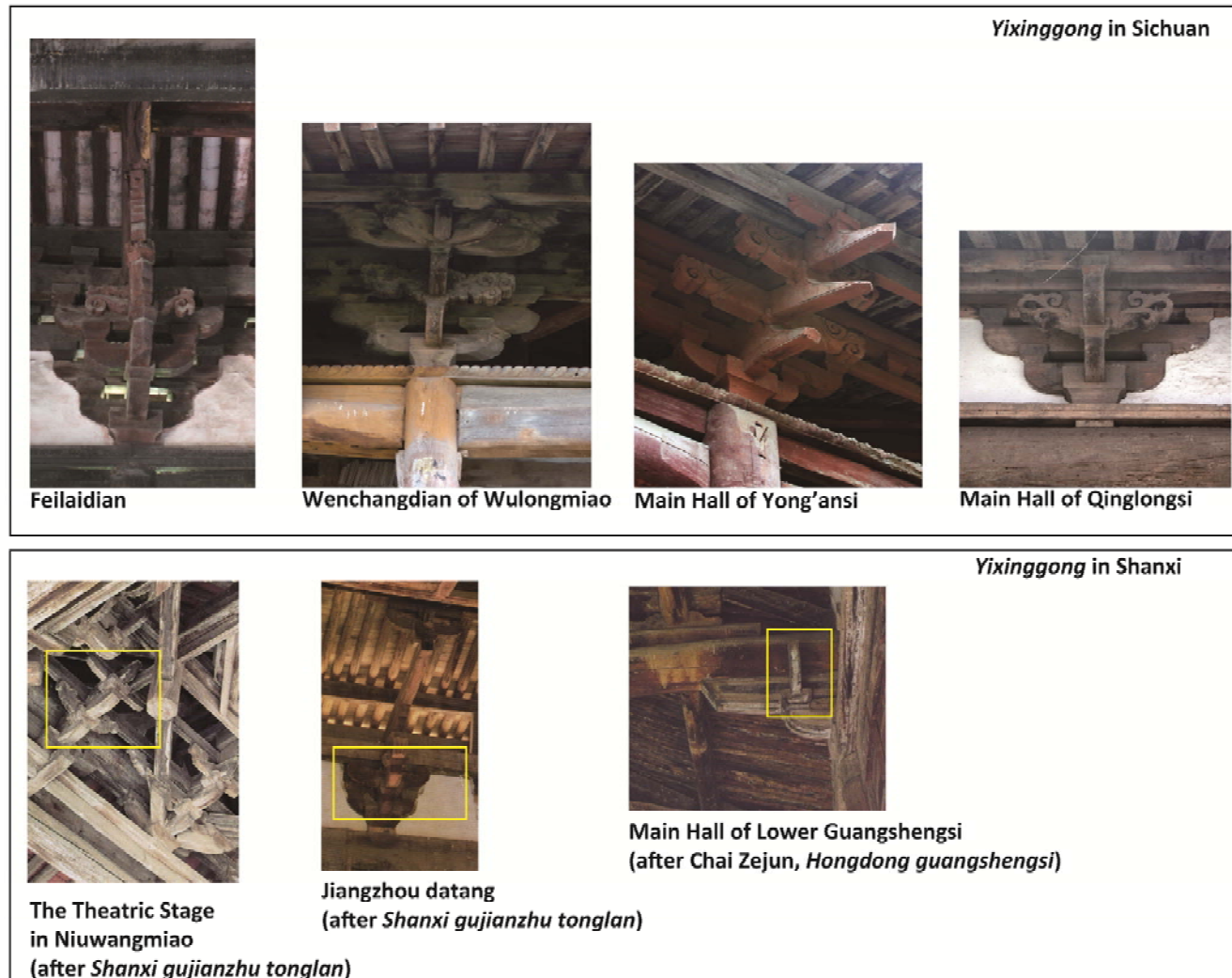
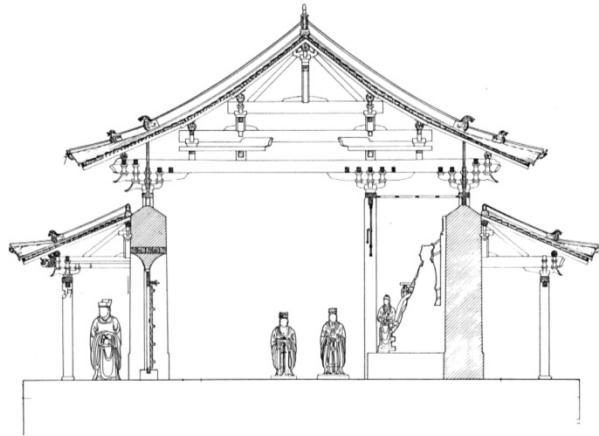


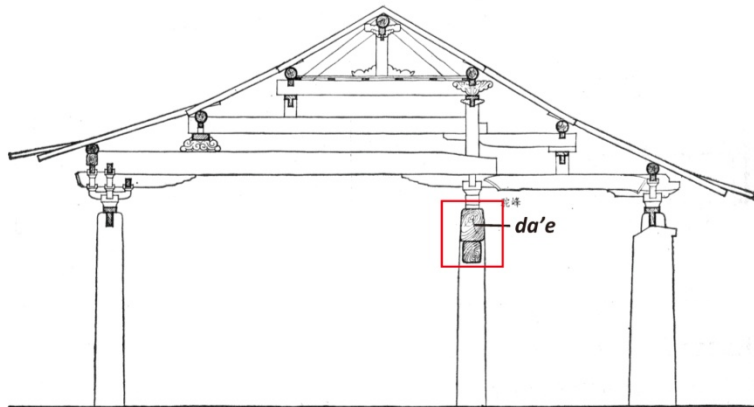
Figure 4.2h Comparison of *chuantongshi* and *da'eshi*



1. Sectional view of Mingyingwangdian
(after Chai Zejun, *Hongdong Guanshengsi*)



2. Huozhou datang (after *Shanxi gujianzhu tonglan*)



3. Sectional view of Main Hall of Shengshousi (after Zhang Yuhuan, 1979)



4. Theatric Stage of Niuwangmiao (after *Shanxi gujianzhu tonglan*)

Figure 4.2i *Da'eshi* in Sichuan

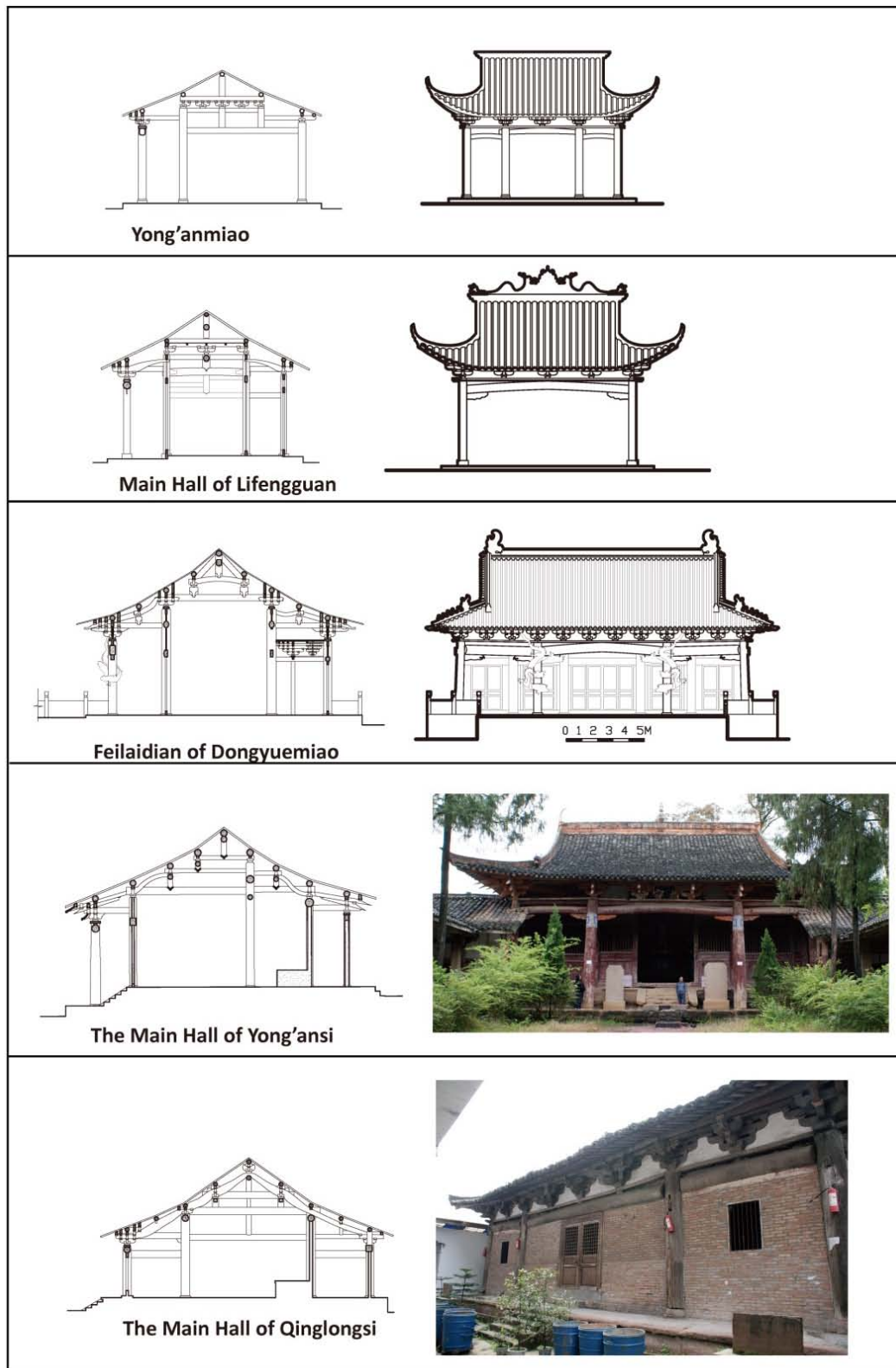


Figure 4.2j Four types of *chuantongshi* Yuan buildings in the north

1. Type I: *sanchuanfu dui zhaqian yong sanzhu* 三椽栱对割牵用三柱

2. Type II: *sichuanfu dui rufu yong sanzhu* 四椽栱对乳栱用三柱

3. Type III: *sichuanfu guantongshi* 四椽栱贯通式

4. Type IV: *wuchuanfu dui zhaqian yong sanzhu* 五椽栱对割牵用三柱

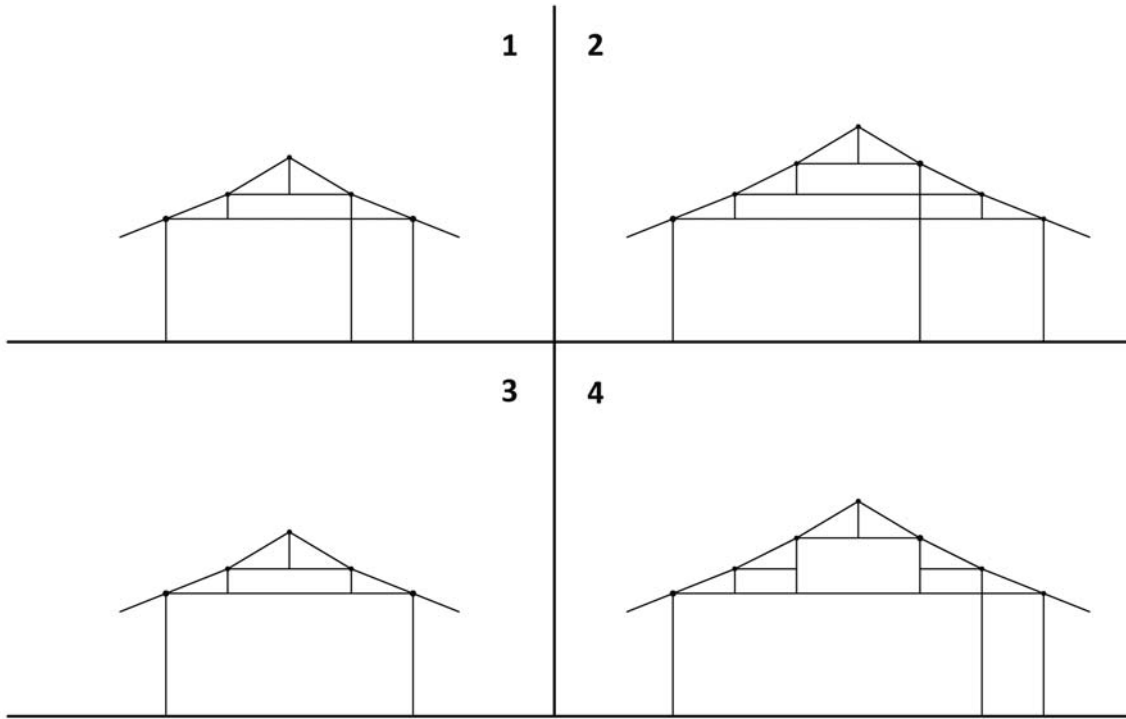


Figure 4.2k Five types of *da'eshi* Yuan buildings in the north

1. Type I: sichuanfu guantong yong erzhu 四椽贯通用二柱
2. Type II: sanchuanfu dui zhaqian yong sanzhu 三椽对割牵用三柱
3. Type III: sichuanfu qianhou dui zhaqian yong sizhu 四椽前后对割牵用四柱
4. Type IV: sichuanfu dui rufu yong sanzhu 四椽对乳枋用三柱
5. Type V: liuchuanfu dui rufu yong sanzhu 六椽对乳枋用三柱

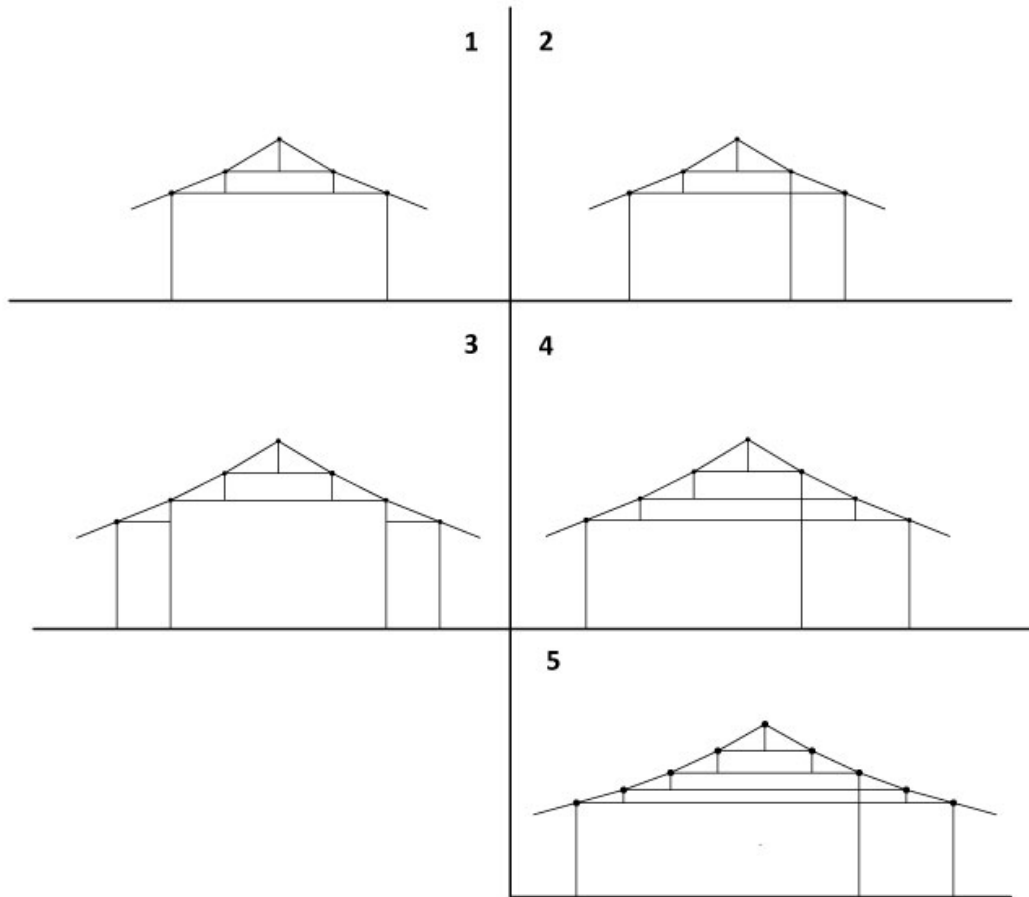
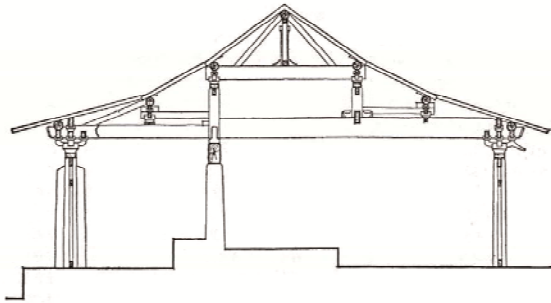
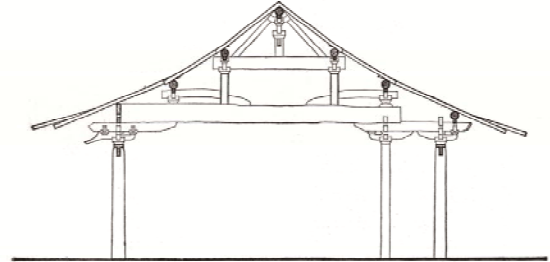


Figure 4.2I

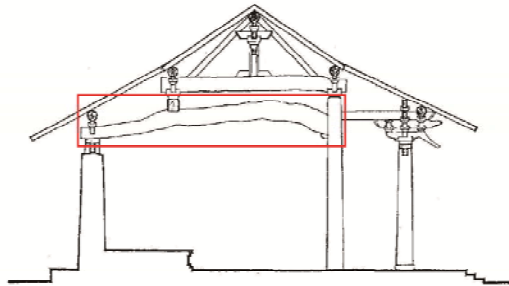
1. Sectional view of the Main Hall of Guangjiisi
2. Sectional view of the Main Hall of Shoushengsi
3. Sectional view of the Main Hall of Longtianmiao



1. The Main Hall of Guangjiisi



2. The Main Hall of Shoushengsi



3. The Main Hall of Longtianmiao

Figure 4.2m Simplification of the bracket sets in Sichuan



**Main Hall of Qinglongsi, Sichuan
Bracket set on the side (left)**



Bracket set on the facade (right)



**Wenchangdian of Wulongmiao, Sichuan
Bracket set on the side (left)**



Bracket set on the facade (right)



**Wenchangdian of Wulongmiao, Sichuan
Bracket set on the side (left)**



Bracket set on the facade (right)

Index

- ang*, 21, 22, 27, 34, 35, 41, 52, 53, 61, 71, 75, 78, 85, 86, 91, 92, 93, 97, 104, 111, 112, 113, 117, 120, 125, 128, 139, 146, 147, 148, 158, 159, 160, 161, 162, 163, 164, 183, 188, 191, 230, 231, 237, 238, 239, 241, 242, 244, 245
- angjian*(*angzui*), 230
- angting tiaowo*, 35, 42, 61, 79, 92, 104, 121, 159, 160, 161, 162, 231, 260
- angwei tiaowo*, 85, 128, 159, 160, 161, 162, 231, 260
- bajia chuanwu*, 167, 231
- ban*, 231
- Bao'ensi*, 10, 76, 77, 84, 93, 123, 125, 134, 136, 148, 157, 161, 170, 181, 250, 254, 255, 257
- Baogusi*, 20, 24, 131, 139, 140, 143, 146, 149, 155, 158, 160, 164, 165, 168, 217, 219, 224, 252
- baogushi*, 231
- Baoshengsi*, 131, 139, 143, 147, 149, 150, 155, 158, 160, 163, 168, 222, 223, 229, 252
- baozhuang lianhua*, 231
- Beidou*, 186
- bian'e*, 231
- bofengtuan*, 231
- bujian puzuo*, 71, 231
- cai*, 20, 35, 63, 85, 112, 138, 139, 140, 141, 142, 143, 144, 152, 155, 161, 174, 181, 231, 232, 235, 236, 252, 253, 259
- cai-fen zhi*, 232
- cao*, 232, 235
- Cao Xuequan*, 99, 100
- caojia*, 33, 232
- cejiao*, 124, 232
- chandu chuomu*, 232
- chanlongzhu*, 69, 232
- chanzhuzao*, 232
- chashou*, 70, 76, 118, 232, 235
- chazhuzao*, 233
- chengchuanfang*, 233
- cheshang mingzao*, 33, 233
- chi*, 233
- Chongfusi*, 138, 198, 199, 222
- chonggong*, 21, 27, 43, 54, 72, 78, 92, 97, 104, 120, 151, 152, 153, 154, 218, 233, 238, 255, 259
- chonggongzao*, 233, 237, 240
- chuan*, 98, 233
- chuandou*, 187, 233
- chuantongshi*, 196, 202, 204, 220, 261
- chuban*, 234
- Chunyangdian*, 197
- chuomufang*, 174, 175, 206, 234, 257, 261, 262
- cijian*, 20, 34, 40, 47, 51, 52, 74, 96, 97, 130, 132, 143, 234, 242
- da'efang*, 60, 69, 74, 239
- da'e*, 203, 205, 234
- da'eshi*, 196, 202, 204, 205, 208, 210, 211, 216, 220, 262
- da'ezao*, 234
- damuzuo*, 234
- dangong*, 151, 152, 153, 154, 218, 234, 238, 259
- dangongzao*, 234
- dangxinjian*, 20, 25, 26, 32, 34, 40, 41, 47, 51, 52, 68, 74, 77, 79, 84, 85, 90, 96, 97, 234
- dianban*, 85, 91, 102, 174, 177, 235, 257, 261

diange, 62, 76, 235
diantang, 62, 75, 165, 166, 167, 173, 195, 235, 244
diesezuo, 235
dingfu, 170, 235
dinghua mohaigong, 235
dingtougong, 22, 28, 42, 43, 54, 171, 172, 192, 193, 209, 235, 260, 262
Dongyuemiao, 9, 12, 41, 44, 64, 73, 102, 103, 110, 134, 142, 161, 162, 166, 225, 250, 251, 253, 254, 255, 256
dou, 123, 139, 236, 237, 240, 242
dougong, 236
Dou-Kousi, 10, 123, 124, 125, 127, 251
doukoutiao, 93, 236
Doushuaigong, 46, 47
Dubaisi, 10, 126, 145, 148, 161, 166, 180, 251, 255, 256, 258
ejiaodou, 164, 236
Emperor Wu of Cheng, 58
Erlangmiao, 196, 197
fang, 225, 236, 242
Feilaidian, 9, 64, 65, 66, 67, 68, 69, 71, 72, 73, 74, 75, 103, 110, 112, 134, 136, 142, 145, 148, 162, 167, 171, 176, 180, 206, 225, 250, 253, 254, 255, 257
feizi, 236
fen, 232, 236, 247
Foguangsi, 138, 198, 220
fu, 36, 38, 39, 174, 175, 203, 234, 236, 247
fubigong, 138, 152, 153, 154, 155, 236
fulian(pudi lianhua), 237
fupen, 23, 179, 180, 237, 243
Futian, 18
Gaozong, 37, 50, 118
gong, 109, 139, 146, 237, 244, 250
Guan Yu, 114, 115
Guandimiao, 113, 114, 115, 127, 251, 254, 255, 256
Guangjisi, 197, 208
Guanyinge, 19
guazigong, 21, 43, 61, 72, 75, 79, 98, 104, 128, 233, 237
huagong, 21, 22, 27, 34, 41, 42, 53, 60, 61, 71, 72, 75, 78, 79, 85, 91, 92, 93, 97, 104, 111, 112, 116, 117, 120, 121, 124, 125, 128, 138, 147, 148, 149, 150, 152, 155, 156, 158, 159, 160, 162, 164, 171, 172, 188, 192, 200, 201, 209, 235, 236, 237, 238, 239, 240, 242, 245, 246, 260
Huang Jin, 36, 38, 39
Huangniangfen, 58
huatouzi, 27, 111, 237
Huizong, 24, 214
Huozhou datang, 204
Jia Sidao, 211
jia'ang, 71, 85, 124, 160, 237
jian, 237
Jiang Wei, 99, 100, 102
Jianggongmiao, 101
Jianghouci, 56, 99, 101, 251, 255, 256
Jianghuai Xingsheng, 16
Jiangzhoudatang, 201
jianzhuzao, 59, 90, 110, 120, 122, 124, 135, 136, 137, 138, 197, 198, 205, 211, 215, 218, 219, 221, 237, 253, 261
jiao'ang, 238
jiaohudou, 238
jiaoludou, 238
jiaozhu, 238
Jijiansi, 8, 16, 44, 45, 48, 130, 180, 190, 191, 222, 226, 248, 250
Jin Shrine, 69, 197, 198
Jingkang zhiluan, 214, 216

jinjian, 238, 242
jinzhu, 22, 238
jituan, 23, 29, 43, 54, 63, 70, 76, 93, 94,
 99, 118, 238, 241
jixinzao, 72, 75, 78, 149, 150, 151, 152,
 153, 238, 254, 255, 259
juanpengding, 238
juansha, 238
jugao, 239
juzhe, 239
lan'e, 24, 29, 43, 46, 47, 60, 84, 102,
 106, 174, 175, 176, 234, 239, 241,
 246, 257
 Lexutang Menlou, 192
 Li Xiong, 57
liangchuanfu, 33, 80, 86, 239
lianzhudou, 112, 239
liaoyanfang, 41, 61, 92, 98, 104, 159,
 239
 Lifengguan, 10, 57, 58, 59, 60, 62, 63,
 78, 86, 93, 110, 119, 122, 135, 144,
 148, 161, 167, 169, 176, 180, 206,
 250, 253, 254, 255, 257
linggong, 27, 41, 158, 159, 163, 199,
 201, 210, 239, 240, 261
 Lingshungong, 49, 50
litiao, 149, 150, 171, 200, 239, 254, 260
liuchuanfu, 203, 208, 239
liujia chuanwu, 239
 Longtianmiao, 197, 209
 Longxingsi, 156, 199
 Lower Guangshengsi, 195, 196, 198,
 203
lu, 15
ludou, 53, 111, 117, 120, 121, 146, 165,
 177, 179, 192, 236, 238, 240, 244,
 261
luohanfang, 240
mangong, 21, 75, 79, 233, 237, 240

mantangzhu, 197, 240
mingfu, 173, 174, 240
mingjian, 130, 132, 136, 140, 141, 143,
 144, 145, 168, 234, 252, 253
 Mingyingwangdian, 196, 200, 203
 Monk Daozai, 44
 Monk Kexin, 44
 Nandou, 186
nidaogong, 240
niujituan, 240
 Niuwangmiao Theatrical Stage, 201
panjian, 240
Pantuoshidian, 108, 109, 110, 111, 112,
 113, 135, 144, 148, 162, 176, 180,
 208, 225, 251, 254, 255, 256, 258
pengjie linggong, 240
ping, 43, 240, 241
ping'an, 43, 240, 241
pingliang, 22, 23, 29, 54, 62, 70, 76, 87,
 93, 94, 98, 99, 106, 113, 118, 122,
 128, 241
pingqi, 241
pingqifang, 32, 241
Pingxianghou, 99
Pingxianglou, 56, 99, 101, 102, 103,
 105, 106, 134, 144, 148, 161, 226,
 251, 255, 256, 258
pingzhu, 241
pizhu'ang, 241
pupaifang, 24, 29, 43, 46, 78, 85, 91, 96,
 102, 106, 111, 116, 120, 174, 175,
 176, 204, 241, 257, 261
puzuo, 27, 41, 60, 71, 74, 75, 78, 80, 85,
 87, 91, 93, 97, 111, 112, 116, 120,
 121, 124, 139, 146, 147, 148, 150,
 152, 153, 154, 188, 231, 241, 244,
 253, 254, 259
qi, 241
qiaban tuofeng, 241

Qinglongsi, 9, 56, 93, 94, 95, 102, 104,
 134, 144, 148, 157, 161, 180, 189,
 226, 251, 254, 255, 256, 257
 qinmian'ang, 241
 Qinzong, 214
 Qiqushan Damiao, 107, 108, 114, 115,
 229, 251, 254, 255, 256
 qixindou, 241
 rufu, 28, 29, 34, 42, 43, 53, 54, 61, 70,
 79, 87, 97, 98, 105, 113, 117, 125,
 126, 127, 128, 167, 168, 169, 170,
 172, 189, 206, 208, 241
 ruyi, 48
 sanchuanfu, 21, 22, 25, 27, 28, 29, 79,
 112, 113, 168, 170, 206, 207, 242
 sandou, 242
 sanjiao heyi, 65
 Sanqing, 186
 Sanqingdian, 139, 146, 148, 149, 150,
 158, 160, 163, 164
 shang'ang, 27, 61, 112, 163, 230, 239,
 242, 245
 shangpingtuan, 23, 29, 63, 99, 106, 242
 Shanhuasi, 199
 shanmen, 19, 25, 58, 81, 132, 242
 shanzhu, 242
 shaojian, 242
 shengqi, 69, 242
 Shengshousi, 203
 shiba luohan, 94
 shicha, 38
 Shipaigong, 242
 shoufen, 243
 Shuangsheng, 114
 shuatou, 34, 52, 85, 158, 159, 199, 202,
 210, 239, 260, 261
 Shuishenmiao, 195, 196, 200, 201, 203
 Shunfuchuan, 243
 shunjichuan, 94, 99, 243

shunshenchuan, 80, 87, 94, 99, 106, 128,
 243
 shuzhu, 22, 23, 27, 28, 29, 32, 43, 54, 63,
 70, 76, 79, 80, 93, 94, 97, 99, 105,
 113, 117, 122, 127, 175, 177, 178,
 192, 235, 241, 243, 257, 261
 sichuanfu, 32, 33, 34, 54, 55, 70, 76, 85,
 86, 93, 98, 105, 117, 126, 169, 201,
 202, 203, 206, 207, 243
 sijia chuanwu, 243
 sufang, 53, 152, 153, 154, 243
 sufupen, 243
 suozhu, 23, 179, 243, 261
 Taihegong jindian, 186
 taiji, 48
 Taoshen, 49
 tatou, 171, 200, 243, 246
 Tianningsi, 5, 6, 7, 8, 9, 16, 20, 24, 25,
 26, 29, 31, 32, 35, 43, 46, 48, 130,
 131, 140, 141, 143, 144, 147, 149,
 151, 153, 155, 158, 160, 163, 169,
 177, 178, 179, 223, 226, 228, 230,
 248, 249, 252, 257
 Tianwangdian, 19, 25, 132, 223
 Tianyi zhenqinggong, 188, 190, 193
 tiao, 146, 147, 149, 150, 200, 244, 255
 tiaogan, 231
 timu, 240, 244
 tingtang, 22, 28, 42, 62, 69, 165, 166,
 167, 169, 170, 173, 195, 217, 237,
 240, 244, 246
 touxinzaio, 42, 75, 149, 150, 151, 152,
 153, 244, 254, 255, 259
 tuofeng, 29, 117, 126, 177, 178, 241,
 244, 245, 261
 tuojiang, 244
 waitiao, 149, 150, 151, 152, 244
 Wang Lanchao, 49, 50
 Weituo dian, 31

Wenchang Dijun, 107, 108, 113
 Wenchangdian, 89, 90, 91, 93, 148, 161,
 169, 181, 208, 250, 254, 256
 Wu Zixu, 49, 50
wuchuanfu, 79, 207, 244
 Wulongmiao, 10, 79, 86, 89, 119, 120,
 122, 161, 169, 181, 208, 250, 254,
 256, 257
 wunei'e, 245
wuneizhu, 62, 245
xia'ang, 35, 61, 159, 160, 162, 163, 164,
 230, 231, 237, 241, 245
 Xiandian, 251
 xianglun, 245
 xiao'efang, 246
xiaomuzuo, 72, 157, 245, 254
 Xiaotongdian, 184, 185, 188, 190, 229
xiapingtuan, 21, 22, 27, 28, 34, 35, 53,
 54, 70, 71, 79, 87, 92, 112, 113, 117,
 121, 127, 128, 231, 245
xiegong, 79, 91, 92, 97, 117, 121, 125,
 156, 157, 188, 193, 199, 200, 210,
 211, 215, 245, 261
 xingsheng, 16
 Xitiansi, 47, 48, 190, 191
 Xuanmiaoguan, 139, 146
xuanshan, 186, 245
 Xuantian shangdi, 185
 Xuanwu, 183, 184
 Xuanyuan, 50, 250
 Xuanyuangong, 6, 7, 8, 16, 42, 49, 51,
 54, 130, 140, 144, 147, 150, 151, 153,
 156, 158, 160, 164, 165, 169, 170,
 172, 176, 177, 178, 179, 180, 193,
 228, 248, 252, 253
xuexie, 21, 53, 112, 113, 117, 163, 245,
 260
xumi, 46, 186
 Xuwangmiao, 49, 50
yacaofang, 154, 246
yan'e, 60, 70, 78, 84, 91, 96, 111, 116,
 120, 124, 174, 175, 176, 234, 239,
 241, 246, 257
 Yanfusi, 7, 8, 16, 17, 18, 19, 20, 26, 27,
 28, 29, 31, 32, 35, 43, 46, 48, 115,
 130, 140, 143, 147, 149, 153, 155,
 158, 160, 164, 168, 173, 177, 178,
 180, 223, 248, 249, 252, 257
 Yanshansi, 198
 yanzhu, 246
yatiao, 171, 172, 199, 200, 210, 246,
 260, 261
Yingzao fashi, 21, 23, 27, 60, 62, 63, 69,
 70, 78, 86, 111, 112, 137, 139, 140,
 141, 142, 143, 146, 147, 152, 153,
 154, 155, 156, 159, 163, 165, 167,
 169, 171, 172, 173, 174, 175, 176,
 178, 179, 180, 181, 193, 197, 209,
 210, 211, 215, 217, 218, 219, 220,
 221, 222, 230, 245, 247, 252, 253,
 259
yixinggong, 85, 91, 97, 98, 104, 111, 117,
 125, 199, 201, 206, 210, 246, 261
yizhuzao, 69, 80, 90, 124, 135, 136, 137,
 138, 197, 198, 205, 210, 211, 215,
 219, 220, 221, 246, 253, 261
 Yong'anmiao, 10, 79, 86, 93, 118, 119,
 120, 122, 135, 148, 161, 162, 167,
 181, 251, 255, 256, 258
 Yong'ansi, 81, 82, 83, 85, 86, 87, 91,
 112, 118, 134, 144, 162, 164, 170,
 180, 250, 254, 255, 257
 yongdingzhu, 246
 Yongjia nandu, 214
 Yonglegong, 68, 195, 197, 223
you'e, 24, 116, 120, 174, 177, 246, 257
yueliang, 23, 29, 54, 62, 172, 173, 174,
 193, 209, 219, 247, 262

Yunyansi, 4, 16, 24, 36, 38, 39, 40, 41,
46, 47, 53, 132, 133, 134, 139, 144,
145, 147, 155, 158, 165, 166, 170,
202, 207, 224, 230, 248, 249, 252,
253, 254, 255
zaojing, 48, 168, 247
Zhang Tingjie, 44
Zhang Yu, 2, 8, 44, 135, 195, 196, 197,
200, 201, 202, 205, 206, 207, 208,
220
zhaqian, 22, 23, 28, 29, 32, 34, 43, 54,
61, 62, 70, 85, 86, 92, 93, 112, 113,
121, 170, 173, 206, 207, 247
Zhenrusi, 4, 5, 8, 16, 20, 30, 31, 32, 33,
35, 46, 52, 130, 140, 147, 149, 150,
156, 158, 160, 163, 164, 166, 168,
173, 176, 177, 178, 180, 226, 248,
249, 252, 253, 257
Zhenwu dadi, 188
zhi, 139, 141, 142, 143, 155, 247, 252,
253
zhiliang, 173, 174, 247
Zhongguo yingzao xueshe, 4, 224, 226,
228, 229
zhongpingtuan, 22, 28, 54, 70, 76, 80,
99, 247
zhuchu, 46, 178, 179, 180, 247, 261
zhutou puzuo, 71, 247
zhuzhi, 46, 52, 179, 180, 192, 247, 261
Zitong Dijun, 107
Zixiaogong, 183
zucai, 138, 155, 156, 248, 260

