Traditional Chinese Architecture

Course: FNAR 394B
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Course Description:

The Traditional Chinese Architecture course will survey five principle forms of Chinese architecture:

- Pavilions / Lou2 Ge2 / 楼阁 /
- Gates / Pai2 Fang4 / 牌坊 / and Pai2 Lou1 / 牌楼/
- Pagodas / Fo2 Ta3 / 佛塔 /
- Gardens / Hua1 Yuan2 / 花园 /
- Bridges / Qiao2 / 桥

The methodology of this course will be a blend of 1) architectural morphology (shapes), 2) historical precedent, 3) anthropological and 4) cultural techniques. This will not be, in a strict sense, a “History of Chinese Architecture.” That is, we will analyze how a building is constructed; study historical prototypes of the Tang, Song, Yuan, Ming, Qing and Republican periods; ask an anthropological question,

“Why do the Chinese build in this way?”

and reflect on what these buildings reveal about Chinese Culture. We already encountered most of these types on our Silk Road 丝绸路。For example, in Xi’an we saw the Small Goose Pagoda, and in the Moslem Quarter the Old Mosque Pagoda, the Old Mosque (temple), and the Gate at its entrance. You may have taken photographs. During the semester we will probably visit the Summer Palace and see its Bridge, Pagoda and Gardens. Not only will students learn how to record these structures, but they will be taught techniques to gather “cultural evidence” about them. One lecture will be devoted to the issue of the demise of Traditional Chinese Architecture, its potential for revival and its suitability for inspiration for contemporary Chinese architectural.
Each student will undertake an independent study of one traditional piece of architecture. Note in particular that the Chinese consider “gardens” as a form of architecture. This research project of about 10 to 15 pages will use standard academic documentation plus photographs and simplified architectural drawings to exhibit analysis and understanding of a Chinese structure. You can study any example of the five types—Bridge, Garden, Gate, Temple or Pagoda. You must investigate in person this piece of architecture. You cannot simply rely on photographs. You must measure it; photograph it; record it in plan, elevation and section; and look for its historical precedents. I will supply you with multiple examples you can choose from.

Course Outcomes:
The student will learn to identify the authentic form and iconography of traditional Chinese Gates, Pagodas, Pavilion/Templets, Bridges and Gardens. S/he will learn how to record a building in situ; measuring its plan and elevation; photographing and developing a visual record of the materials, structure, iconography, imagery and ornament of this building. S/he will also be able to describe and illustrate the primary construction techniques involved in its structure. Having investigated this building, the student will be able to explore the relationships between it and other traditional forms. This collateral research will enhance the “texture” of his/her research document. S/he will be able to look for analogous structures in history anthologies and relate the “topic building” both in form and ornamentation to those relative buildings. The student will learn how to do comparative analysis of building type through the use of our library holdings. The student will learn how to reflect on, "How and Why this specific example of architecture was conceived and built.”

As the student becomes familiar with Traditional Chinese Architecture, s/he will naturally consider why these forms have fallen into desuetude and reflect on whether, "Such a traditional Chinese architectural form can once again become a part of the vernacular of contemporary Chinese architecture.” S/he will compose a three page essay on the topic and present three examples of contemporary buildings that attempt to utilize the Traditional Forms.

Course Requirements and Form of Assessment:
Students must attend all class lectures, field trips and demonstrations because each class will require active participation such as learning how to record and document a building. Reading assignments will accompany almost all classes. A mid-term test will determine the student’s comprehension of the five types of Chinese architecture. A research project will demonstrate the student’s ability to analyze a structure physically, iconographically and historically. Each student will also compose an essay on the "Future Viability of traditional forms in Chinese Architecture.

Grading:
Class Participation/ability to comment on assigned readings: 20%, Weekly Assignments: 20%, Mid Term: 25%; Research Paper 35%.


Attendance is Required:
Absence from any class without a valid explanation accounts for a deduction of 2% of the final grade.

**Academic Honesty:**
TBC abides by Loyola University’s Academic Policy Statement.

Bibliography......all of these books will be on reserve in the “Scholars’ Alcove” of the Anton Library.

You may read them on location but **may not borrow them overnight.**


Liu Dunzhen. *La Maison Chinoise*, Paris: Bibliotheque Berger-Levrault, 1980. (A translation of this text in English will be provided for your use.)


Class Schedule:

FIRST Week: Why Study Architecture as a non-professional? Why study Chinese Traditional Architecture? The function of this class is to lay out the landscape of books, topics, types of research and technical techniques you will learn. Most of these topics will be addressed in the first class:

- Do you ever plan to purchase or build a house or a building?
- What do you need to know about a building as an owner/user?
- To ask the question: “Why do people build in this way?” is to ask an anthropological question.
- Why do the Chinese use these materials? Why in this way?
- What architectural terms, “plan, elevation and section” tell us about a building.
- Why and how “historical dating” is difficult and sometimes impossible.
- How does “Feng Shui” shape a Chinese building? Is it all superstition?
- What did this fine tradition look like? How was it “forgotten”?
- What tools will we use to study buildings? Camera, measuring devices, scaling devices.
- What books have we access to? What texts must we read each week?

CLASS TIME: A mini-field trip to see Bridges, Pagodas, Temples, Gates and Gardens.

HOMEWORK:

When you finish reading you should be able to answer:
- How is Chinese architecture related to nature?
- In what ways (distinctive from Western) are Chinese Gardens laid out?
- What is Lin Yutang’s explanation for the “sag” in Chinese Roofs?

When you finish be sure you can answer these questions:
- What part of a Chinese Building holds “pre-eminent” privilege?
- How do Hua Kung (brackets) function. Think carefully?
- What material radically distinguishes Chinese architecture?
- How does Willetts disagree with Lin Yutang about the “sag” of Chinese Roofs?

Complete the Form: Return to the Yuan Canal Park and fill out the Questionnaire.
Turn in at the beginning of next class.

SECOND Week: The Gate: A detachment from the House or from the Village Wall? In this class we will examine two forms of “gates”, those called Pai fang and those called Pai Lou. What is the difference? We will examine photographs of houses with gates attached and detached; City walls with gates. In the course of this class we will learn:

- The differences between Pai fang and Pai Lou. How each one functions?
- Their method of construction and self-support.
Some “sumptuary” regulations about the gates of houses.
The nature of Spirit gates
We will also note Ghost Walls

CLASS TIME:
Discuss the ideas you learned in your readings. Prepare to answer in class the questions above.
Learn how to take photographs of Gates.
Learn how to measure Gates.
Learn how to “draw” Gates in Plan and Elevation and Section.

Mini-Field Trip to see three different Pai Fang and Pai Lou in our neighborhood.

HOMEWORK: You can draw and photograph any of the three Gates we saw today—or, find a new one to draw.
- Draw in scale the elevation of a Pai Fang or a Pai Lou
- Draw in scale its plan
- Draw in scale its section

THIRD week: The Confucian College. “The Orientation and Function of a Traditional Chinese Temple.” This class treats two issues: 1) the significance of Confucius for the Chinese culture. His “philosophy”, code of conduct and method of teaching have massively affected all Chinese. 2) The morphology of a Chinese Temple. We will prepare for next week’s visit of the Confucian College by addressing these issues:

CLASS TIME:
- How does a Confucian Temple function as a “college”? Who are the “inscribed” names on the stone tablets? What are the symbols of their education?
- This Temple is an example of “temple architecture”. It manifests most of the characteristic materials, structures, ornament and form of Chinese Temples.
- The “spatial allocations” of a Chinese building.
- Orientation: the relationship between the Sun and the Earth
- How does orientation shape a building at several specific longitudes?
- How does a courtyard function in a Chinese building? In a plaza?
- What is the ‘hierarchy” of a typically “Han” house / building?
- What “control factors” (OR, is it mere “design”?) determine a “jian” and a “jia”?
- What other devices are used to augment or delimit the “orientation” factors?
- The Differences between Load-Bearing walls and Curtain walls

HOMEWORK:
Read: Zhong Guo Gai Shuo, Dunzhen, pp. 32-75.
  - What are the organizing principles of the courtyard?
  - Why are the “jians” usually of an odd number? Why are four “jians” proscribed?
Read: China’s Old Dwellings, Knapp, pp. 71-163.
  - What are some of the variety of platforms and bases?
  - How are wood buildings framed?
  - What is the difference between Tailiang 抬梁 and Chuandou 穿斗?
  - What is difference between “curtain wall” and “load bearing wall”?
How are roof tiles made?


FOURTH week: Field Trip to the Confucian College. *Meet at West Gate at 1:15 PM so we can have maximum time investigating this suite of buildings.*

CLASS TIME: We will inspect and measure one of the buildings of the Confucian College. Bring a hard-backed tablet or drawing book and a pencil. I will give you each a measuring tape (either the digital kind or the conventional tape kind). In the course of the field trip we will learn:

- The “sense” of a “Han” courtyard system
- The proportions of a typical “Han” temple
- The functions of the overhanging and sagging roof
- The dimensional relationship between various “bays” (jian 间, or kai jian 开间)

CLASS TIME PROJECT: Together we will do a comprehensive measuring of one of the buildings.

HOMEWORK: To prepare for next class:

- Be ready to explain:
  - The materials used in the earliest, middle and late periods
  - The purposes of a Pagoda
  - When does the “Indian” form, the “stupa” appear in China?
  - How did the Viewing Tower and the Stupa merge?

FIFTH week: Pagodas 佛塔 (fo2ta3): *An Amalgam of the Chinese Viewing Tower and the Indian Stupa.* How, When and why did this happen? In the course of this class we will consider:

- The Chinese Tomb.
- The Indian Stupa, its origin and function; its migration to China.
- “Conflations” of Stupa and Viewing Towers—though some remain discretely either a Stupa or a Viewing Tower.

HOMEWORK: Prepare for next week’s visit on Saturday (note that class is moved from Friday to Saturday! So we can take advantage of Student trip to the Summer Palace).


- Pay special attention to the detailed Summer Palace Garden Plans, pp. 22,23 and 24.
• Identify photographs pp. 19-115 on map so you can “follow along”.
• Using the text above, be prepared to answer the following questions:
  o How are the Yuan Canal Park and the Summer Palace similar “in spirit”?
  o Give three examples of how Chinese Landscape Architects make “man-made objects” look “natural”.
  o What are the functions of ‘pathways’ in a Chinese Garden?
  o Why are the majority of the buildings on the south face of the hill of the Summer Palace?
  o What is the purpose of the little river that leads to the “back lake”?
  o Is there a “true” pagoda at the Summer Palace? If not, where in the vicinity?
  o Describe the shapes of at least three different bridges.

SIXTH week: Saturday, Gardens and Bridges. The Chinese enjoy walking through space in unique ways. “Right of Way” is a nonissue. You have already observed this at the street corners and cross walks. What is so different? We will observe their (vectors) pathways and bridges to see that they are more than ‘functional’ objects. They are poetic. Now go back to your own answers to the Questionnaire on the Yuan Canal Park and your readings about the Summer Palace. What did you record?

CLASS TIME: We will visit the Summer Palace to explore a traditional Chinese “garden”. We will observe:
• How “elaborate” is a Chinese Garden. Compare to any great garden park you know (Tuileries Paris, Grant Park Chicago, Central Park New York, Chapultepec Park Mexico.)
• How the topography was actually changed to construct the landscape
• How landscape and buildings are fitted together.

HOMEWORK:
• Be prepared to answer all the Readers’ Guide questions above concerning Chinese Gardens.
• In preparation for next class, please read more about the Pagoda:

SEVENTH week: Bridges. We saw four different bridges at the Summer Palace. Given the prominence of “feng shui” in Chinese culture, can we understand why pools of water, rivers, canals, lakes, streams, etc. are so important to Chinese Architecture and Landscape Architecture? If so, can we now understand the poetic function of bridges? Westerners think of “bridges” as a means to cross a water barrier. What do Chinese think bridges are?

CLASS TIME: We will survey a variety of images of bridges including those we have seen at the Summer Palace and the Yuan Canal. We will also look at “bridges” within the Forbidden City, and, even look at “bridges” within Chinese restaurants and hotels.

PREPARATION for MID TERM EXAM: We will review the five principle forms of Chinese traditional architecture we have seen so far: Bridges, Gates, Gardens, Temples and Pagodas. We will highlight these issues you must know for the exam:
• Chinese sense of space. How it is different from Western sensibility
• Orthography: the importance of ‘direction’ relative to sun and water and mountain.
• Vectors: Paths of Travel: how they are different in Chinese Buildings and Gardens
• Gates: Distinguish between Pai Fang and Pai Lou.
• Gates: Describe various “functions”
• Temples: explain the sagging roof and its “prominence” as an architectural feature
• Temples: explain timber-frame construction: Tai liang and Chuandou
• Temple Courtyards: explain successive receding movement through space.
• Temple Structure: How does a Hua Kung (bracket) function? Why needed?
• Pagodas: distinguish between Pure Stupas, Pure Viewing Towers and “mixed” Pagodas
• Pagodas: why are they built? What are several reasons for them?
• Bridges: Why is water so important to Chinese Architecture?
• Gardens: How do Chinese Gardens contrast and compare to Western Gardens?
• Be able to identify Beijing Confucian Temple and its Gate, All the principle buildings of the Summer Palace, the Gates identified in your photocopied Power Point lecture notes, the Pagodas shown in Power Point, scenes along the Yuan Canal.

EIGHTH week: Mid Term Exam: the examination will review all the matter of the first seven weeks. It will take several forms:
1) Identify photographs of buildings, gardens, bridges, objects which we have visited
2) Identify functions of structures, such as columns, beams, purlins, brackets, rafters, etc.
3) Explain in your own words “Why” the Chinese built these objects.
4) Cover all the “preparatory” materials listed above.
5) Differentiate between various kinds of roofs, gates, pagodas, etc.

The exam will take about two hours. After that we will have a break and then give a sneak preview of what you will see in Shanxi Excursion.

NINTH WEEK: October 25 to November 02 SHANXI EXCURSION. I hope you will go on this trip. We shall visit Pingyao, a Chinese ancient city whose city wall is still intact. We shall visit the Magistrate’s mansion, visit another Confucian Temple, a “City God” temple, and see a number of excellent city Pai Lou. You might want to consider making any one of the structures you see there the subject matter of your research project. For example, you may want to carefully measure and photograph one of the many buildings in the Magistrate’s complex. Or you may want to study one of the gates, or the “theatre” of the City God temple.

TENTH week: Looking Back so as to Look Forward
• Mid-term exam
• What we saw in Pingyao
• Transition of Focus to Final Projects: If you have not already chosen a subject, I will present a list of perhaps as many as 40 options for you to consider for your research project.
• Review of Criteria of Research Project (project should be at least 10, nor more than 15 pages)
  o “in scale” measured plan of research subject
  o “in scale” measured elevation of research subject (may not apply to gardens)
  o “in scale” measured section of research subject (may not apply to gardens)
  o “three dimensional” drawing of structure
At least Four **Exterior** photographs of your structure.

At least Four **Interior** Photographs of your structure.

One “fact sheet” providing Information about geographical orientation, age of structure, materials of construction, source of materials.

Several “close up” detail-photographs of materials (such as brick or stone wall, thatched room, columns, “columns semi-buried in adobe wall,” decorated beams, or significant ornamentation or painting).

Your commentary and analysis of this structure: “What makes it distinctive? Why was it built?”

Collateral images of buildings or gardens or gates, etc. that resemble your study topic. Ideal to find “precedents”, that is forerunners, of your subject. These “precedents” can be photocopies or scanned photos of (at least four) analogous houses/buildings in Chinese history. Plus commentary on their relationship to your house.

Any other aspect of your structure that merits explanation. For example, if this structure was massively “changed” or “renovated” in recent years, you should note that.

Footnotes to your text, citing sources and page numbers. If you downloaded photographs or “borrowed” them from classmates, their origin should be cited.

Bibliography (in any one of a number of academic formats).

**HOMEWORK:** Review all your notes, photographs, materials. Next class inform me of the topic of your research. (No delays acceptable). Bring in the following:

- Photographs of your subject
- A basic “measured” plan of your subject.

**ELEVENTH week:** Another Temple: From this class forward, we will re-arrange the class in this form:

1. The first hour will be allocated to another example of one of the five types. *So, for instance, today we will examine another Temple.*
2. The second hour will be allocated to review of your research documents
3. The third hour will be allocated to whatever “technical” tasks are needed to assemble your project. For instance, we might treat the matter of “inserting” photographs into a text,” or, “scanning documents”, or, “how to ‘photo-shop’ a poor photo,” or, “how to do citations and footnotes,” or, “how to draw in scale.”

**HOMEWORK:** Bring in a clean and clear measured “elevation” of your subject architecture. Elevation drawing must be in scale. *Locate “scale” in lower right corner.*

**TWELFTH week:** Another Form of Pagoda: A pagoda with Pagodas on Top

1) Topic: Other Forms of Pagodas
2) Topic: Your “elevation” drawings
3) Topic: technical topic TBD

**HOMEWORK:** Bring in first three pages of your text in which you introduce your topic and tell us in one paragraph what is fascinating about this topic. Include at least four photographs in the text.
THIRTEENTH week: Another form of Gate: Spirit Gates
1) Topic: Spirit Gates
2) Topic: Your “First three pages of text”
3) Topic: Technical topic TBD

HOMEWORK: Bring in fourth through sixth pages of text. In these you explain the “structure” of your subject matter. You will want to incorporate the “section” drawing into this text.

FOURTEENTH week: Another Bridge
1) Topic: Bridges
2) Topic: Your “Second three pages of text”
3) Topic: Fixing footnotes and Bibliography

HOMEWORK: Your Finished Research Project. It should be at least 10 pages long but not more than 15 pages long. Re-read your text and images. Try to do as many of the following as applicable:

- First Page: Explain what you find interesting about your building or garden and what you intend to present in the next ten pages. This is your Introduction.
  - Show at least one good photograph in the midst of this text; label it carefully.

- Second and Third Pages: Explain what topographical, meteorological factors, Feng-Shui, etc. explain the “siting” (where it was placed)
  - Where your building or garden is located—download a Google map and scan it into your text. Mark clearly what is “north”.
  - Show the “Plan” you have drawn of your topic. Have the top of the plan at the “north” end of the page.

- Fourth Page: Show multiple aspects of your building or garden or bridge. Explain each photograph so that the reader knows why you are showing this particular view. Include your “Elevation” drawing.

- Fifth Page: Explain “how” a part (not every part!) of the structure was built; use your “section” drawing to explain this. For example, show a “cut-away” view so we can understand how the columns and beams fit together. Or, how the “Pai Fang” stands up.

- Sixth Page: Now show the interior views of your building (or, exemplary parts of the garden). In your text explain each interesting detail you see.

- Seventh Page: Here you could show “collateral” images you gathered from other books to explain the similarity of your topic or other similar topics. Again, explain how your topic resembles that of the earlier or antecedent building, garden, gate, etc.

- Eighth Page: Explain a few of the peculiarities of your garden or building. For example:
That Entrance is not at the South. And Why. Show photographs or plans again.
That the plan is neither symmetrical, nor, hierarchical and why.
That the building has not a stream of water nearby, etc.

- Ninth Page: Your Conclusion: “In this paper I have examined the stupa that sits to the north of the Forbidden City. It was built in 17—to commemorate the fact that the Qing Dynasty was ardently Buddhist. I have shown ........

- Tenth Page: Your Bibliography: It should include any book you consulted, even if you did not quote material from it. You should also include in your bibliography any data about maps you have down-loaded, or, photographs you have borrowed, etc.

- FIFTEENTH week: All projects due on my desk by 3 PM

DO A GRAMMAR and SPELL CHECK, PLEASE.

Thank you for your wonderful, creative hard work!

Amended 01 July 2014
ADDENDA ABOUT TAKING PHOTOGRAPHS

Each student [or, we may work in teams depending on previous decision in class] will photograph one piece of architecture in detail, showing at least four interior faces and all exterior walls. Utilize “form sheet” provided. **Photograph yourself standing next to doorway to reveal comparative heights.** Measure the plan of building. Measure the height of walls and roof gables. If it is difficult to measure “height,” measure one step or one brick carefully (including one layer of mortar) and count the number of courses of bricks. Interview occupants of house utilizing English/Chinese form sheet provided. Examine and photograph materials (Brick? Adobe? Wood? Combination?) of walls, ceiling beams, roof tiles, etc. Measure and photograph doorway and at least one window. Measure thickness of walls. Make sure you note which geographical direction the building faces!

**CHECK LIST**

1) Photographs of all Exterior Walls.
2) Four Photographs, one of each interior face (North, South, East, and West).
3) Photograph of yourself standing next to the gate/doorway entrance.
4) Measure plan of building using tape measure. Record in either Metric or Imperial system.
5) Measure height of principle walls. Easiest: use laser device.
6) (If difficult to measure height of any wall, try this simple device: measure one block of brick from center of mortar line to center of mortar line. Then count the number of courses of bricks).
8) Photograph ceiling beams, roof tiles, typical arch or support.
9) Measure thickness of typical wall.
10) Measure a typical window.
11) Find out what direction the building FACES: South? Southwest? 
12) Photograph any significant ornament or decorative detail.

**STRATEGIES FOR WORKING WITH PHOTOGRAPHS**

- Bring photographs or digital file to class. You may bring your lap top.
- Consider using Photoshop to lighten up or bring out details of photos.
• Consider “cropping” dead space from your photograph.
• Tease Out of photographs added data: “measuring objects in photo”
• How to Record on paper measurements using modified architectural procedures using “scale”
• Orthography…where is North for your building?
• The Language of Architecture: Recording Plan, Elevation and Section
• To what degree did your building resemble a typical Han Domestic Dwelling?
• How did your building observe Chinese Feng Shui?
• What is the impact of Geography, Weather, Altitude and Wind Direction on your house?
• Where do we go in our research from here?