建築多樣性
Diversity of Architecture

交通大學建築研究所
碩士論文

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大綱

建築室內設計課程是以培養學生設計能力為主之課程，學生需於課程中學習和發展各種相關技能。一般而言，學生於課程中學得之設計能力包括：

1. **設計基礎**
   - 學生需掌握基本設計概念和原理。
   - 學生需掌握如何應用設計原則於實際項目中。

2. **作業與評估**
   - 學生需完成指定之設計作業。
   - 學生需進行自我評估和同儕評估。

3. **實作與應用**
   - 學生需進行建築物或室內設計實作案例之研究。
   - 學生需將設計概念應用於實作案例中。

Abstract

Diversity of Architecture is talking about the three main processes training the ability of design architecture, from zero to workable. People who want to build a building need to learn a lot. First, they need to know how to draw from concept diagram to practical engineering drawing. Second, they should know what happened that a building from ground to completed the process of a project. Finally, they cannot only learn how to draw on the table but also do the practical work. That's the utility items one should learn if he/she want to know what exactly happened during learning architecture design. The whole process includes trial and error, test and evidence, which combined with the three main steps. They are Practice, Project, and practical.
Training ability in architecture design

Where is the concept of architecture design come from? The relationship between architecture and arts is inseparable. Usually you can find a lot of concepts in design architecture from different kinds of arts, because they are beautiful and meaningful that people can get inspiration easily from them. Most important of all, architecture is necessary in human's life, if there are aesthetic elements in architecture, and then it will enhance the quality of life.
在選擇50x50cm的紙張上，
以幾何方式進行Ocean Park的幾何衍生創作。
(2D > 2.5D)
以不能夠變形的任何部位為原則。
Create sculpture from light spread in space

Sculpture could be the inverse of space, so making a concrete sculpture can make people know better of so-called space. The first step of learning create architecture is learning create concrete object and abstract space, then making sculpture can help. Light play the most important role especially when designer intends to represent the feeling of space, so it's the theme. Placing an experience feeling light happens in your life, and tries to make it concrete, to be a sculpture object. Light Spot is my subject that when a grain floats in the space lighten by light, it means a kind of relationship happened between light and object and observer. Moreover, creator and observer play different roles appreciate the light, it's another relationship about view and inverse.
The music itself will give you an atmosphere, which is the main topic of space design should hold. And music score itself exist lots of clues can used to different spaces for different roles need. These diagrams describe the process how a music score transform to pics, and pics can represent much usage for space. And, even the passage is included, too.

Create space from Music

When music plays, people can feel the meter and special order with time goes by. When you enter an artificial space, that's the same feeling designer want to give you. The most difficult part transform musical score to not only visual space but also feeling feel in you. Because sounds cannot be touched, so let's examine it, usually, designer will take the musical score to make some drawing and then finding clue to go on. My first try was making lots of rectangles by music score, Miheal J. S. Bach. Rectangles were come from the long of every musical note maintain, and the key of them played. Once transform musical score to visual diagram, it's easier to think more about what music should be liked. However, the thing is, designer still need to notice the feeling between music and space will give (or/and) should be the same. I mean, how to let observer feel space designed exactly from music is the most important thing.
Music Hall for kids

People may just pass by a place for kids reason, attract them to stay, to be the audience watching children play music and feel the fun atmosphere is the purpose. Students and their parents can follow the obvious passage to go to classroom and play at the same time. Then parents can leave and also stay to appreciate the class process. About the teacher, they have inverse passage from the other roles. Monsen, from J. S. Bach, do have the diversity to complete all of them. Moreover, the interactive between different roles will happen when they are in the process during the class goes by.

Model concept: replace the old part, gray to the new part, while parts to see the music department and music hall for kids in holiday.
Create model from movie and dance

How to describe dance by making a single model? This question is just the same as asking how to make a movie by the movie. Obviously, both dance and movie have timelines that you can pick one moment to represent the typical spirit of it. Or you can use abstract methods to re-interpret the dance step or the story.

Most important of all is you need to let people feel the same thing when they watch the model you create. Then, you can use the beautiful model as a prototype to create an actual useful space in advance. Every advantage has its disadvantage. Visual action can be a good help when making another space by what you had seen, but it also can destroy the simple concept. If you catch too much picture because you won’t know how to follow. Think dance as the main topic, and both human body action and model paper combination just media trying represent dance as well.

Moreover, the new model you create will have its own space that maybe can be the new space type not only useful in dance space but also a very nice space for human mode. This kind of indirect design methods can create very new space style for not only dance but also International World.

Relationship between movie and space

This practice is watching a movie about dance Tango than making model from it. You can say it is a practice interprets movie or dance to model. Dance is event happened in 3D space but movie is in 2D compression. My way is use 2D movie talking about dance Tango as the analysis to do the diagram and use 3D real Tango dance to draw the 3D space in model. This process taking Tango dance as a movie is the process from 2D to 3D. And, the process transform the diagram to model is the process from 2D to 3D. The relationship between movie and Tango is just like the relationship between diagram and model(space). So maybe it is possible mapping the Tango movie to diagram, then mapping the diagram to space. Finally, the result will be abstract and creative.
Create a door to represent a new meaning of “knock, open the door”

Choose an interactive motion between two people, the infer medium must be as obvious as possible that designer can design object to let two people use it in necessary way. The main idea is treating door as a test that two people should show their truly heart to make the door open. So, the so-called “door” will have two silhouettes in one. When one knock, one side door will open and waiting for the other side open. All possibility considered to contain all kinds of stories. The main material tests are bamboo and wood, use computer and paper to simulate the situation. The right concept needs comply with the right material. It takes a long time and lots of practice to merge idea and reality. Every concept test can be the key step during the process. Sometimes designer cannot get it because he/she has lost in the mass so cannot judge and do the right selection. Then, it will be better that stop in every period and listen to others opinions in your case.

The transparency of the door can help to define the relationship of two ideas.
conceptual gallery that only for an artist Robert Smithson

To commemorate a great artist, Robert Smithson, who wrote several articles and made lots of works discussed the relationship between human and nature, we design a gallery as his monument. Designer should treat himself as Smithson and devise what kind of space is Smithson wants. First of all research Smithson thoroughly is the must-do thing to do. After analyzed one main typical work of Smithson, Broken Circle in Emmen, we can see the same conceptions from his great work, Spiral Jetty. Those are symbol, mirror, the natural force, entropy. Second, the diagrams drew by Smithson can interpret to spatial language and also can have their own characteristics. Finally you may run the process of design, between below and recreate concepts main spirit. Maybe it will change all the time except deadlines. It's a training after all.

concept 3D model of spiral passage.

concept model of spiral.

spiral rule: the right proportion makes several size to use.
PROJECT

Operate a whole project practically

Compare with other arts, architecture distinguish itself because it is not only a kind of art but also the necessary of life. Human beings need space to survive from the time primitive age, barbarian hide in a cave, to temporary, people can live in their own house. Therefore, the first thing people built a building always for the basic necessary of people's life. However, it is the second thing in architecture design. That is, after the training of esthetic then the school will teach you to learn the skill of structure and texture.

The complicated thing is that every designer should force him/herself to find the balance between practical skill and theoretical skill that only belong to themselves. Students are limited after all. Don't think to please everyone. There is no certain answer, because the judge may be the house owner, the professional person of art or architecture, or the passerby.
From project of house

Professors like train new guy just learn space design by imitating master's masterpiece, especially in their house case. After knowing the main idea of a masterpiece, the thing need to do is redo everything that happened before. When imitating, you can find there are many hints can inspire a new design style that only can verify this time but maybe next time.

Hence, imitating masterpiece means one can advance in design at faster way. The reason imitate house design of master is to learn a complete project in small scale, so even the new guy can handle it. In master's opinion, house design is the hardest work no matter what to do that they cannot satisfy over.

imitate John Pace's work

Case study: House of John Pawson. By buying an old house in London, John Pawson reinterpreted the whole house in elegant way. Merge indoor space and outdoor space to make space looks wider and comfortable. Not only the main idea about the house never want should be known, new guy must know the part, movement, proportion and the arrangement of the house. The marriage makes the atmosphere complete.

After case study designer propose her self's site and requirement. Then she can do another design project but stay the case study's style. The spirit isn't copying, Pawson's form but the method he deals with the space and material even the light.

Customised design

Customer should satisfy with the main idea of designer of first (this means the main spirit of case study), then designer could do the design fit the customer's requirement.

Merge the special issue and the necessary

Social main space, big family space (includes 4 small families) and small family space that are necessary in this project. There are three parts of this house project that in order to follow the main idea designer should try to merge those parts in one. That is, Pawson merge all in one small old house. Using design method can solve it. Then designer can adjust the linking in detail.

STUDY CASE - John Pawson’s house

John's speed of thinking has a big impact on the designed space. Fastness decides the efficiency of the designed space. The fastness in his designed space makes a quick decision on the design. Small family unit collection.

STUDY CASE - John Pawson home

Small family unit collection.

Study case - John Pawson's house. A house designed with fastness, a big impact on the designed space. The fastness decides the efficiency of the designed space. The fastness in his designed space makes a quick decision on the design.
Replan the urban plan strategy

This project is one of the Taipei city urban plans that is ordered to renew an area of old part of Taipei, government should recruit official and even unofficial team to think about the new strategy. In the beginning, government built a flood control project to prevent the flood happened by later development of the old route of Taipei city. Therefore, the natural river and ecosystem is destroyed outside of the city. Now everywhere around Taipei city, people cannot breathe the air from the sea neither see the green sight in the city.

The most important thing of this planning is to equally emphasize abilities of urban design and architecture design of designer.
strategy of choosing site

It is very important that choose a site correctly. In urban design point of view, it costs a lot to build some public spaces. Therefore, build the right thing in right place is very important. In architecture design point of view, the right place can inspire the designer to do a good design. Although space designer cannot decide where the site is. This project start from urban design and will end in concrete architecture design. That means the designer have more space to operate the whole project.
New concept of riverbank with community center

It is necessary that human beings need to learn to cope with the nature. In the future, cities will open all boundaries between city and the nature as they could. What can we do now is very hard but important because you cannot just open the riverbank up. Original riverbank is too artificial to touch the nature so the designer should try finding a balance between open and close, opening some windows in between.

Diversity

Taking advantage of the structure of artificial riverbank, we can build a community center between the city and the nature. The functions include leisure, sport, parks, restaurants, green parks roads for bike and traditional lamps and so on.
To brew a concept of a project

This is a project choosing how to renew an old city part, how to do a small thing to change a whole community, and how to create a right business in a right space. During the project, designer can choose any part of a city as his wish just because he is interesting in it. Afterwards, she will do lots of research about the site she chose. Broadly speaking, the concept will be inspired in the process when designer doing the research, taking advantage of the concept designer could develop a series of steps to come with site and solve the problems happened in the site.

However, the first thing which will be presented in the proposal is about the concept. The proposer does not need to know if the concept is the trigger or the conclusion in the project.

The site keeps empty by reconstruction road in the corner of crossroad; we can see the section clearly which shows the old structure in the street. Just in the place it collects lots of activities about the community and the commercial acts in the city center. In the small street where need many parking space so most part of house rear by the street change to be private parking space.

This kind of old street cannot be cut apart between public space and private space because the community get used to talk on the road just like talking in front of their house. There is a way to protect their safely and prevent traffic problem create private space for public.
all in one

Even though people may not like to live in an old space, they may love to spend one or two days living in an old place recreated. Some old buildings in this street have old wooden structure but new skin outside because those owners renovated their houses by time. Coping with the requirements of the vista and residents, leisure, tourism and culture, the site can provide an space feed different needs for different customers.

**SITE**

- **Objective**: The site aims to create a lively and attractive community space that is accessible to all, providing a sense of identity and belonging for the local community.

**Program**

- **Maket**: 提供汽車站 (張處)\[新北市復興區]
- **Station**: 提供交通及人潮導向空間 (台開公司、張處社區等處)
- **Hotel**: 提供休閒活動等商業生態 (一日居民)

**Profile**

- **HISTORY HALL**: 具歷史文化之高硬體生活混合區
- **CONTEMPORARY LIFE**: 常態下去
- **LIFE STATION**: 生活空間需求特質
- **ROADSIDE STOP**: 最佳頓數處

**Personality**: 經市民使用反而更懶散，隨意環境和人文的關係

- **董子（白掛曰）**: 「夫經不三不復，如婦不生也。」
- **張子（白掛曰）**: 「夫經不三不復，如婦不生也。」

個人行為，社會行動，都會影響空間的氛圍感！

空間的空間型態也影響了人們的行動動態！
Responsibility of design

When designing the usage of a place in this moment, the place will be used for decades. Design will affect a space for a long time. Big conceptual design is from lots of analyses and discussions. Designer should understand urban design from learning big space decisions. Nevertheless, detailed design can be done by the designer, which can influence people in different ways, especially when considering the future of the space.

Planning for the section drawing, not only helps others understand your design idea but also helps you yourself understand it well.
From a specific landscape

It is a site located in Taipei city belonged by Cultural Affairs Bureau of Taipei City Government, Stone-God Temple. Originally it was a big stone on the road which link Taipei and Shewing. When the time goes by, the stone was buried in the road but still circumscribed as a Temple. Now people should go downwards in the road to see the big stone, Cultural Affairs Bureau does not know how to do but really want do something on it and this project competition happened.

In the beginning, designer should choose a specific professional researcher doing analysis on the Stone-God, in the team there are experts of sociology, anthropology, ecology and meteorology research the Stone-God in the same time in this project it is the case which talking about designer design a project from meteorology research.

Meteorology element

Water and wind are the key roles in this performance. The big stone rolled down to the hill in the very beginning, to fix the things up were water and wind.

After doing the calculation, we can handle the situation about how big the water and wind affect the site before, now and what will be in the future. Although people cannot predict the future because it depends on what human beings treat the world, we still can do some, in objective way.
Infant scheme

The infant scheme is designed to accommodate the needs of young children. It includes a playground area, a safe walking path, and shaded seating areas. The layout is designed to be accessible and easy to navigate for parents.

Experiment of wind

To cope with the wind around the site, there is a small experiment recording the pattern of the wind in the site environment. It is a scenario helping designer more understand the site situation.

The wind everyday work in the valley include the mountain breeze and the seasonal weather.

Man-made always think they are the king of the world cannot pay more respect to the nature, the fact is that the Nature response the behaviors of human beings in many and more subtle way. In old age, human beings used to pray the God give them a environment to survive, that is one part of culture existed between the human and the nature.

STONE GOD

Stone is a metaphor for durability and stability. The stone material is used throughout the site, creating a sense of permanence and connection to the earth.

Functions

- kids
- family
- believer
- people

SITE situation

The site situation is an important consideration in the design process. It includes the natural topography, existing buildings, and surrounding areas. The design must be integrated with the site to create a cohesive and functional space.
A cultural parking space

To add more parking is the necessary undoubtedly, to raise the position of Stone-God is very important thing after. The thing is, maybe they can collect all in one. Image that, Stone-God having the weekend in the city zoo, but they find it is very hard to find some parking spaces, so finally they decide park in the Stone-God area and walk to the zoo. In the afternoon time before they go home, they will be tired and hungry, so there will be the perfect place to provide resting environment and near their cars. Not only plane but also section design has its viewpoint. Geography branch of the river across the Stone-God, and it was the reek which caused the big stone drop by. The first order is the site is obeying the brahman. It can be the structure also. The second function of the design is the entrance of the parking space, the ticket office. It is the entrance of the stone-God also, make the project has some cold help people relax here. Actually, resident is the main role here, so there is a community center as well that people can held life activities around the natural space.

Relationship between the wind and water

In this design wind and water is fluent not only in the surface but also underground. Opening the door for wind and wind especially in the section of this project is the main spirit of the design.
PRACTICALITY

Experience of practical

The training processes of Architecture design include school period and social period. School will concentrate to how to teach student logical theory and pure fancy operation, to let students feel the pure sense and sensibility. Afterward, when they graduate from school, the society world will teach them how to compromise the adult environment gradually. However, now school can provide more. That is, during the vacation time between every semester in school, students need to do more plan to learn to enhance their ability about merging dream and reality in architecture design. There are several options they can choose to do during their winter or summer vacation. They are internships, architectural travel, exhibition and workshop.

In order to enhance personal experience of architecture that student should do some internship in famous architecture company or go travel during long vacation. Workshops always happen in campus or special conferences. Famous international professor can not only join the conference but also invited by university to direct one or two workshops that can learn international interactive by teach.

Exhibition is the extra collection includes many students’ creativity. In order to hold an exhibition, students must rearrange their works. Take advantage of the rearrangement students can think hipper of the case they thought already finished. Case won’t finish forever; there is only deadline in architecture design project. Students even can join the suitable competition when they finish the rearrangement. That is a popular way that students can advance to society from school contemporaneously. Finally, practical factory operate can make sure ones practical ability is equal to his theory, that is the most important of all.
校園內的跨學科交流，帶來在校慶及校東西南展覽中的活動，使不同專業的學生能相互學習和交流。

工作坊主題

工作坊的主題為「Workshop: flashing workshop」。Jaanke Janssens教授將會領導工作坊，學生將會在校慶期間進行設計和展示活動。

工作坊流程

工作坊將會分為幾個階段，學生將會進行設計和展示。這些活動將會在 REALLY BIG ZIPPER和Dear Rotterdam工作室進行。
遠景展望

對外開放的校園建築，目標是應用於學生
的學習空間，學生會，教師辦公室以及客
服中心的結合。設計對象是學生的公共空間，並非
對外開放的活動場地。校園建築面上大，
建築設計圖書館及其他相關的，是熱絡的設計
常見的設計過程不同，可以編輯在可接受的設
計，亦可以讓他人如何呈現設計。

生活未來式（分類）

想像一下，你在十年之後會怎樣生活？
生活或正在多元複雜，各種新議題的浮現，都
可能會影響學生生活的關鍵角色。它們翻動著有
一個完全不同的設計是，用它們為題材，書寫未來
生活的模擬體驗。

我們構造處於美好的年代，可以轉換為藝術
家的精確優化生活空間。我們設計科學以寫出
數的週期圖表，再將數學函式上再最佳的翻
動空間。我們在知識與技術的品種חס業員，所
以在任何空間著重有機結合設計的思考。

這便是“未來生活式”的設計技術。

此次設計為在書桌量少學生極端的第二幕
例，用於現在的極端一次設計，設計基準之所有助於
一次正式的建築設計，包括間隔與空間整合
設計，概念設計耐和智慧型實況等。基地是新竹市
光復路上的中華開發產地，一種特色是保留住類
地開發的必然是空間運用的設計。

光復路及新竹市與校園之間連結最重要的
交通動脈，環境品質是校園整體大面積，卻又
不能避免，然而必要科學設計的校園，將整個
將成長而進行設計，將未來校園的整體重大
的空間規劃，必是重於技術邏輯，另外重
必須提出全球性的公共空間。

Exhibition in campus

In order to create the stage for people
outside of the school, exhibition held in
campus can attract students and members of
society who are interested in architecture visit
and interactive with school.

Future tense Team

Imagine what kind of life would be 10
years later? Life is complex gradually
and lots of topics involved that they may be the
rule characteristic change our life. We try to
discuss lots of topics that may help designer
design a totally new space necessary in
the world.

This is the first time of NCTU Architecture
exhibition and this is the first case in the
exhibition. It is a case talking about renewing
an old campus area. Originally, it is a place
providing teaching place to be live, but now it
looks too big to be a living area. School needs
more space for students but less space for
teachers, house, so it is necessary for
rearrangement.

The road is the main road linking Hsinchu
and other cities. To approach the road the site
got extraordinary characteristic of quite
environment. It is so different apart from the
road. Conceptually, NCTU need more public
space not only for teachers but for students,
that’s why the project happened.
比鄰而安靜的步調緩慢的校園風和最新
繁忙的市交通車之間，該給一個怎樣的集
合定這些現象，給論述在書本之間的相對
性可否尋求為對等且深入去探尋？居所的
生活當中又怎麼轉變為可動可靜的組合？

了然於心的不僅是不一樣，但沒有正確管
理的顧問之中就是需要蓋，人生的局面何
是，也不過如此模樣。

真實的條件和裝設的理論如何能夠結合在
一起？在展現極度及獨特的環境之中表現
現實，並在最後的設計理論，所以適宜企業
在環境的矛盾下再者依據的相互進行，這也
是所有設計的過程我們在生活的基礎上，一
邊探索新的元素，也一邊從科學理論的邏輯發
展出來一套設計方法，讓他們在風光花園之
中建設。

展現的現代設計是一種在現代的，實在最
安靜的起點相差的距離，如此展現的樓梯的組
合道路之間，在空間不數間的情況下，要
維持著現代的整體形式，並且確認空間的使用，
賽道的當中所有每個人的尊貴形象，並且進入未
來必須要引導的過程。這是一個對象在住宅動
動機時，更物質的樣式產生，相對論的整個形式上，
空間的構建因此產生。
Creativity Laboratory of ITRI

ITRI is a creative laboratory and an important center of Industrial Technology Research Institute (ITRI) in HsinChu. I got a internship chance in information center of ITRI in 2004 and later in Creativity Center in 2006. My work was operated MAYA created 3D model in support of an interactive project.

Architect office in Tainan, SAS

The direct way for students to catch up to the practical field is having an internship in an architect office. The first real architectural internship I had is in SAS, Taiwan. I learned after joining a competition and built SAS official website that time. It will help a lot if there is a leader teaching you how to do during the internship time. The main idea what you want to learn locked is important also.

Field office in Yilan

Professor Sheng-Tjen Huang is a very famous architect who has a office named Field office in Yilan city. Every year he invites several students join on his office during internship works. The specific advantage work in Field office is you can enjoy yourself 100% in work, not just tasks.

Every office has its own atmosphere it makes learning how to adapt at every situation a main topic learning how to be a good architect.
Europe Experience

Looking forward to studying architecture in Europe, I visited several European countries to see innumerable classical buildings in Europe.

Sustainable Development and the Design Professions

"Close-loop material flow (from Cradle to Cradle)" —

According to William McDonough, things that cannot be digested by nature (e.g. plastic) should not be produced in human world. So, we should stop producing plastic. That’s so-called “Material Passport,” which means that everything produced should have its own instructions, can help people use it as well as possible, because things should always be dropped less first, even though they are still useful. Besides, he stated that we should produce things that can be totally reproduced. Today’s science and technology can do it, that’s no doubt, but expensive.

However, most of countries in Asia now are the developing countries, what developing countries need is to devote to the industry development to improve their economy and society. So, it is very difficult for them to consider that sustainable development is necessary, especially say that the only way to function sustainable development is stopping producing chemical products & greenhouse gas. Although it seem like a mission impossible, still it is a guideline of sustainable development. We can find a compromise to deal with changing climate base on the statement.

"Backcasting (Backcasting: A natural step in operationalising SD)" —

It means that we should not just forecast how terrible the future will be, we should try to imagine what the future life we want and start to prepare for it now in order not to exhaust the resource in the world; the writer John Holmberg creates The resource funnel that try to manage requirement and supply.

"Implement adaptation (from Climate Change Adaptation by Design)" —

Climate keeps changing, sooner or later. What we need to do is not only changing our life style (to reduce Green House Gases emissions, passive attitude) but also finding new design attitude to adopt the future life. (to create new method to design urban or buildings, active attitude)

Class literature has 5 kinds of scale to talking about how to implement adaptation into Urban/Building design (the active attitude): 1. context-based, 2. neighbourhood scale; 3. building scale. And as the article said, there are many cases already completed in the world in some way. These show practical cases of Backcasting. So, sustainable development is no longer a fancy dream.

My personal strategy is:

1. All human being should be educated to know that the resource cannot be wasted (the concept of cradle to cradle).
2. All governments should establish policies that suit for their own countries (base on the principles of Backcasting and the resource funnel).
3. All designers should treat sustainable design as a main attitude in practical case. (implement adaptation)
Handicraft raining

Factory is the place give human being exhaustion but accomplishment. As the first annual of March 1 in NCTU, we need to set up a whole new factory by our own, include arranged as staff inside it. Moreover, the factory class maintained a whole year. It supplied students the handicraft ability training.

moving factory and woodworking

After the training of tool use, we got a bigger space so we need to more tools. In this space we started the first set of furniture. Somehow there are analogies between carpentry and human handicraft when making construction. Maybe it is because the texture of woods.
Metalworking and installation

Making things by metal processes can make things be more sustainable. It's a project in NCTU public spaces, we made a set of furniture for the open place use in campus.

That is the best memory I had in NCTU not only created 16 sets of furniture but also experienced the truly handcraft spirit.
Diversity of Architecture