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<th>受聘者姓名</th>
<th>加藤義夫</th>
<th>期</th>
<th>from 2012年(年)7月(月)1日(日) to 2013年(年)2月(月)1日(日)</th>
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<tr>
<td>研究或教學或科技研發與管理計畫名稱</td>
<td>Research &amp; Redevelopment design of the Ping-teng Environmental Dam area and the teaching of Sustainable &amp; Nature Simbiosis design classes</td>
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<td>計畫主持人（申請單位主管）</td>
<td>Prof Taysheng Jeng</td>
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<td>補助延聘編號</td>
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一、研究、教學、科技研發與管理工作全程經過概述。（由受聘人填寫）

Please summarize the entire research, teaching, or science and technology R&D and management work process (To be completed by the employee)

1. Research and Redevelopment design of Ping-Teng Environmental Dam Area; The 3rd subject of the graduate students class ‘Design of Architecture & Environment’ between Sept. 2013 and January 2014

After I came to Taiwan, I knew 3 Japanese civil engineers who made dams to change Taiwanese land and agriculture situations in the beginning of 20 century. The research and the final subject for the class of 9 graduate students to revitalize the area were held for one of them being called the environmental dam.

八田與一 is well known as the civil engineer in Taiwan & Japan who directed 2 dams in Tainan and Jiayi. 礫田謙雄 who may have worked with 八田與一 constructed the siphon styled 白冷圳 dam at 新社 in Taichun. The other person, who is important for the simple environmental dam history, is 鳥居信平 of the director to construct the barrage of 347m and the canal of the environmental dam of 3436m sharing the water among the agricultural area of 2483ha in Lai-yi of Ping-Teng. It was built between 1919 and 1923. 鳥居信平 was graduated from Tokyo university some years before the above 2 persons did. The dam and his statue were hidden for a long time by the original people being afraid to be destroyed by the government at that time. It became a little known for a short time by the topic of the TV news when the barrage was renovated from timbers to PC concretes several years ago. But now it is not so popular and 鳥居信平 is not so well known.

That dam has been appreciated because it didn’t destroy the landscape in balance with the environment of the community. The community has loved it and used it for a long time.

3 dam engineers have been appreciated by the communities in Taiwan because the dams protected many floods and kept the stable provision of water. Each of them was constructed by different innovative way with local consideration, reminding...
Concerning the environmental dam history, the Ping-teng environmental dam was constructed in 1924 and influenced not a few dams in OKINAWA and some areas in Japan.

When I came to Taiwan, I found no information and no Taiwanese to know the details. Accidentally in the beginning of this semester I found the information of a Japanese group who visited on it. I had a contact with the Taiwanese Prof. Cheh-Shyh 丁 who has researched and reformed the dam for a long time being appreciated by the Japanese visitors group. Finally I visited there with some students invited by Prof. 丁 to see all of the dam and the branches finding the possibility for the future and requested the graduate class to challenge the design for the last subject to activate the site.
The dam, the canal, has the following features.
The volume of the water becomes 120,000 m³ at largest.
The dam is the canal and the water is moving in the tunnel and along the mountain, and it has 5 branched points distributing the water to the farm lands after it started from the barrage of the river.
That is to say It flows in the mountain and the villages.
The length between the starting point and the final point is 3436m and almost 7km if somebody will go and back by bicycle. It is a good distance for cycling and all of the points were considered that the site has the possibility to be sophisticated and popular for visitors if the shelters and the surroundings will be well designed, watching the landscape and the length of the dam.
Anyhow the area and the landscape were considered good location and scale, so that the Japanese government of that time would regard it significant establishing the large sugar
factory. The projects were expected to show innovative ideas for the activation of the site for the visitors.

Conclusion 1;
The subject for the presentation and the design started at the mid of November after the second subject finished and the final review was January 13th. Two guest juries joined. One is Prof. Cheh-Shyh of the civil engineer who assisted the class concerning the materials and the sightseeing and was expected to have the common and professional knowledge about the environmental architecture which many architects don’t have.
The time to spend the projects may have been tight and the results were different. The most of the students were not used to complete the projects rationally for a short time but some of them have done smart results. Anyhow it is important for the students to recognize the possibility of the projects to develop and activate the community. And it is hoped that the concern about the area will be continued.
The followings were the presentations of the projects of the students; the starting site, point 1, was designed by all of 4 groups showing the memorial area of the underground architecture. The other points were separately designed by each group, proposing the building type to activate the community, and the bicycle roads, the accommodations for the visitors, the diverse facilities using the site were shown. It was expected that some places significant for the original people will be sophisticated with the new local technical presentation and the project area will become the one where the visitors will repeat to visit.
I dare say that I have been a pioneer in Japan to design passive solar and sustainable architectures from 1970s continuing to think from glocal design towards sustainably pluralistic local design criticizing globality meaning Americanization. That is to say the dynamism of the pluralistic locality is important against the danger to be nationalistic towards wrong sustainable glocality.

2. The problems and the views found in the teaching of the other subjects for the 3 classes in this semester
2a. The other subjects of the above same class were ‘Environmental Lighting Design’ in September and ‘Bio-climatic Architecture Design’ between October and November.
For the 1st one it was considered that the students didn’t well understand and most of them designed lighting design. It may be the problem of NCKU because they are not used to think the environment just thinking the object because I saw good results in the other university.
For the second one it was the class that each of the students designed A Bio-climatic Architecture, reading the book of climate and design, studying the environmental technical knowledge of the architecture and knowing passive systems separated by the climate zones.
As one of the established member of Bio-climatic committee in Japan in the end of 1970s, I have continued to teach bio-climatic architecture of the basic environmental architectural
design in Taiwan for the last 9 years. Sometimes I spoke the results in Architectural Association in Japan (日本建築学会), concerning the education of Bio-climatic design concept and the methods to teach. The knowledge of the materials and the structures of the students were poor but their efforts to find the ideas and the images were recognized.

2b. The class of Eco-sustainable House Architecture: the interesting results were seen. The class was constituted of 7 students of 2 Taiwanese, 1 Chinese and 4 Europeans and Americans. The first work was to write and speak the report of the building element selected by each student. The second one was the design of a small passive solar house in the limited volume focusing the building elements selected. Chinese and Taiwanese students were recognized to work so earnest and so hard showing many drawings but the designs were seen unbalanced short of the architectural details and consideration about the materials. On the other hand 4 foreign students, not Asian, showed simple, flexible, good sense and the logical details with the materials considering insulation sunshine. It means that Taiwanese students are not used to consider thermal transfer, conduction and conductivity while European students have some of the knowledge. It may be the problem of the education of the architecture in the undergraduate education in NCKU or Taiwan.

2c. The class of Asian Natural Simbiosis (Environmental) architectures: 2 reports of home tasks were presented by the paper. One was finished in November and the other will be done in January.

The purpose of this class was the study and the recognition of the students about the environmental architectures and the environmental modern architects in Asia. The 90 reports of 45 students will be submitted writing the answers for 7 questions finally. The following problems were found for the 1st report.

The differences of Western architecture and Asian architectures should have been more clearly mentioned, while the original and modern architectures in 15 Asian countries, the genealogies of Dragon and Ramayana, the influences of Fensui (風水), VHASTHU, Naga etc. were spoken. I felt it discussing with the students that the students wanted to study something basic and innovative different from the typical orthodox design but they may feel in vain in NCKU although they studied the popular contemporary architectures from the media without criticism.

3. Except the classes, the recommendation of the Internship students to the office of Japanese architects:

Before I come to NCKU, I was asked to recommend 6 students to the offices of some international well known architects in which they wanted to work. They worked in Japan in 2011 and 2012. In this semester one NCKU student asked a recommendation for a Japanese famous architect office showing the portfolio, and so I wrote it for the one of 2014. The other 2
NCKU students asked the same to be recommended for the one in Japan but didn’t continue. The students will have a chance to use the internship student in Japan if they will have passion and clear request.

Conclusion 2;
It is noted that the students were generally earnest but short of the knowledge of the basic methods, the details and the materials. Then the architectural designs what they have imaged look lack of logicality and rationality in spite of their passion. Architectures will be further developed towards environmental and glocal aspect. Namely globality is stable but pluralistic locality is dynamic. The students are considered to know such tendency but look to feel few chances to study them. The fact that 4 European students of the class of Sustainable house design showed good eye for architecture design much better than Chinese and Taiwanese students will mean that they unconsciously learned the basic environmental architectures in their homes. It may be the problems of the instructors and the life environment.

14th/Jan/2014 described

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