



## A Process of Academic Service in Architecture through Project-based Learning Method: A Case Study of The Equine Therapy Resort in Toong-Luang Community, Tak

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### Abstract

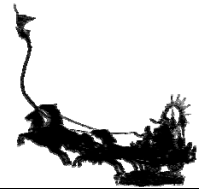
In order to analyze the Learning and teaching strategies of the Academic Studio Plus group, Faculty of Architecture, Rangsit University, this study focuses on the teaching and learning integration of academic service projects through project-based learning management. This method has the students to concentrate the opportunity to develop various skills that are necessary for the practice of architecture. This article also targets to present the process of integrating academic services with teaching and learning of architectural design courses based on real projects. The method began with the building plan designation of the case study, which is the equine therapy resort in Toong-Luang Community, Tak. The researchers conducted a survey, recorded the data of the project location, as well as studied the needs of the project owners. Next, the researchers analyzed the data and synthesized it into creative workpieces according to the architectural design process. The results showed that the method of teaching and learning architecture through project-based learning management could train students to practice the architecture profession in various aspects by themselves at every step. The evaluation by the concerned parties concluded that the academic services offered by the students were interesting and able to meet the objectives of the project owners. However, the students must consider the feasibility of investment and suitable construction techniques as well. Therefore, this type of teaching and learning process could develop the knowledge, skills, and professional experience of learners following the needs of entrepreneurs. The recommendations received can be used to develop methods for managing teaching and learning architecture appropriately.

**Keywords:** *Building renovation, Cultural tourism, Project-based Learning, Architecture.*

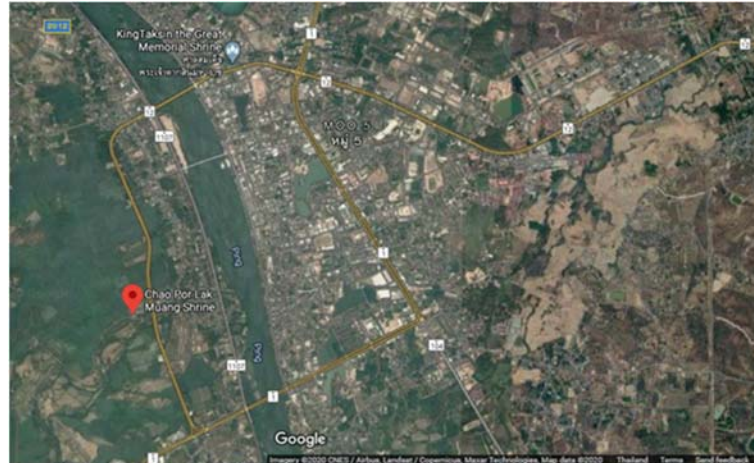
### 1. Introduction

Citizenship qualifications in the 21st century have their influence on the teaching and learning of architecture that focuses on building the professional skills of students. Educational institutions offering courses in architecture need to be adjusted to meet the changing economic, social, and environmental contexts, which is an important goal of the Academic Studio Plus group of Faculty of Architecture, Rangsit University. The Academic Studio Plus group has the policy to promote learning mechanisms for learners so that they can gain professional experience through teaching and learning, which integrates academic service projects based on participation in real projects. It also set the scope of the course content of each academic year that enables students to develop the skills that are necessary to practice architecture through project-based learning.

Learning the process from creating academic services based on real projects is the primary mission of the Academic Studio Plus group, which is one form of teaching and learning management mechanism of the Faculty of Architecture, Rangsit University, in hope to bring knowledge, capability, and the work skills of students to create workpieces for the departments, public, and private organizations. Moreover, this strategy also provides opportunities, which have an important tribute in creating knowledge for students with steps. Each year, the students will be encouraged to collaborate with each other, practice presentation skills, critical thinking, and be open-minded to others' opinions. Therefore, the learning management in the form of the Academic Studio Plus group that uses project-based learning that concentrates on student-centered learning management, in which the learners have taken steps to practice their architectural skills in all aspects by themselves. This study method is consistent with Bloom's Taxonomy learning theory. This theory is showed to help students try to gain more enlightened comprehension and distraction in this project and their integrated learning experience. The rule of project advisors, the project owners, and all parties are involved in supporting the opportunity to create learning experiences for the learners (Thomas, 2000). According to



the mentioned teaching and learning method, it is the origin of the case study of the equine therapy resort project, Thung Luang community area, Pa Mamuang sub-district, Mueang district, Tak province.



**Figure 1** A Google map (online) shows the location of the equine therapy resort.

The equine therapy resort project is located in the area where is related to the history of Tak province. The project location is in the area of the Old City Pillar Shrine on the west bank of the Ping River (see in Figure 1). It had been the military area since the Sukhothai era. Later in the Ayutthaya period, King Naresuan had chosen the area of Ban Pa Mango as the location of the city landmark, which there is any evidence of the establishment showing until nowadays. Besides, when King Taksin the Great was appointed a governor of Tak city, he built his palace, commonly known as "Mango Forest Palace." The surrounding area was an agricultural area for harvesting as military supplies, so this area was known as "Thung Luang" (see in Figure 2), as it has been referred to today.



**Figure 2** shows the site of the project



Design guidelines for the equine therapy resort project, which is an accommodation building supporting tourism activities. Archa Therapy or horse-riding therapy has been brought to be used as a part of the project to help treat autistic children. Therefore, it is necessary to consider the physical and technical factors that affect the building's utility space, are consistent with various legislative laws, and according to the needs of the project owner who wants to create a new type of tourism activity in this area. Particularly, the equestrian activities must be taken into consideration in both the horse-riding therapy, recreation area for tourists as well as legal requirements for building control, including the size of the building, which is a factor that must be considered together in determining the usable area of the project. Also, the process of analyzing the factors of tourism systems, in order to understand the motivation goals, other relevant contexts must be analyzed together, such as tourism and service activities, tourism information communication demand, market supply including legal requirements, economic factors, society and culture, environment, public facilities, and the physical context of tourist sites (Preechapuch, 2016) in order for tourists to decide to travel to the project.

As mentioned above, when the working group acknowledged the project owner's needs along with the data analysis of building conditions, it made them aware of the framework of the architectural design process. The results of the analysis would be synthesized as guidelines for designing buildings to be suitable case studies in order to present to the building owners and the stakeholders with the project to evaluate the work jointly. Therefore, the conclusion of this educational management model was to explain the algorithm for the teaching and learning of architectural design courses through project-based learning, which is the authentic learning process that could train students to practice architecture professionally in all aspects at every step by themselves. The recommendations received would be used as guidelines for the development of the teaching of the Academic Studio Plus group and to improve the model of teaching and learning before applying to the case study in different contexts.

## 2. Objectives

The main objective of this article focuses on presenting the teaching and learning management of architectural design courses through project-based learning by integrating academic services. Our case study is The Equine Therapy Resort.

## 3. Methods

The integration of academic services in collaboration with the teaching of the architectural profession through project-based learning management was carried out in a manner consistent with the applied methodology of applied research or operational research. It aims to find knowledge and apply various knowledge or technologies so that they could be useful in practice (Mahabat, 2018) by researching primary data of buildings, case studies, analyzing, and synthesizing to obtain guidelines for creating academic services through the mechanism of project-based teaching and learning, which has the operational procedures as follows:

3.1 Project selection planning, case studies, and the teaching and learning plans under the time frame of the academic calendar by corroborated between the owner, project adviser, and students.

3.2 Physical data analysis, space requirements, legal restrictions, techniques, local materials, methods and possibilities of construction in order to set a framework for appropriate building improvements

3.3 Synthesis of concepts and creative architectural designs that are consistent with project intentions and objectives.

3.4 Assessment of operations by stakeholders, discussion to apply suggestions to improve teaching methods appropriately

## 4. Results and Discussion

The implementation of the learning process from the creation of academic services by using real project-based learning through the above research. The results obtained from the process mentioned above could be considered as follows:



#### 4.1 Project Selection Planning

Principles and reasons for choosing this case study were based on a real project that matched the purposes of authentic learning and following the content of the 4th and 1st-year architectural design course. When the project owner's intention had been acknowledged, then lesson plan was constructed together with stakeholders, students, and project advisers to set goals and scope of academic services under the time frame of the academic calendar. According to the survey of the surrounding context with the project owner and project adviser, it was found that the project location on the east side is adjacent to the area of Tak City Pillar Shrine, which is an important historical site of Tak Province and on the south, there is Huai Mae Tho, which is a creek that flows along the boundary of the land. On the north side, there is a public path of the community. Furthermore, in the west, it is an agricultural area. There are no permanent buildings in the area (see Figure 3). Therefore, the project area planning has no limitations of the original buildings, resulting in freedom in area planning that agrees with the main goal of the project to be a tourist attraction and linked to the local historic area. However, the information obtained from the site survey makes learners concern about the operational framework for determining the size of the building and the techniques for building conditions according to the project objectives.

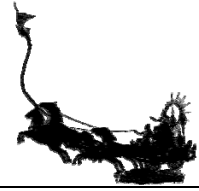


**Figure 3** Site surveyed with the project's owner.

#### 4.2 Design Concepts and Project Requirements

The result of the survey of the surrounding context of the students together with the project owner according to the above information when taking the living space needs into account together with the components of the tourism system, it made the team acknowledge the building design guidelines to promote tourism activities by using the building design approach. This approach was combined with the agricultural atmosphere, connected to the history of the "Thung Luang" area, which was the agricultural harvest area for use as military supplies in the past. In this regard, the selection of exterior materials was the use of bamboo, a local material, in conjunction with building local styles that responded to usage activities. Also, the project design must take the law, local ordinances, and the surrounding context of the project location into account so that the project could be carried out in a suitable approach with the surrounding context.





The project owner intends to connect the tourist attractions in the area by encouraging communities to participate in tourism activities in the project. Hence, divided the project area into various parts, which consist of

- 1) Reception & Cafe
- 2) Farm Resort
- 3) Paddy Field
- 4) Equine Therapy
- 5) Box stalls & Petting zoo
- 6) Service & Maintenance
- 7) Community shops
- 8) Parking

#### 4.3 Design work

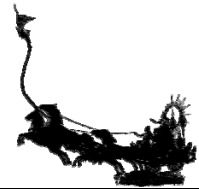
Creative workpieces of student project designs that were presented to the project owner after brought the data of the project owner's needs to analyze and synthesize with project adviser into architectural designs can be considered from Figure 4-14 as follows:



**Figure 4** The equine therapy resort master plan



**Figure 5** View from main entrance



**Figure 6** View from Parking



**Figure 7** Reception & Café Building



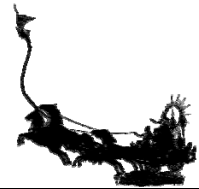
**Figure 8** Landmark of the project: Wooden Horse Pavilion



**Figure 9** View from Parking

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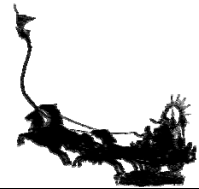
**Figure 10** Farm resort.



**Figure 11** Box stalls & Petting zoo



**Figure 12** Equine Therapy

**Figure 13** Service & Maintenance**Figure 14** Community shops

#### 4.4 Evaluation of Learning Outcome

Evaluation of architectural learning management methods through a project-based learning management by relevant parties, including investors, architects, engineers, project adviser participating in the evaluation could be concluded that the teaching and learning process of the Academic Studio Plus group was a method of teaching and learning that is beneficial to the development of architecture education. The overall picture of the academic services presented was interesting and could be further developed to be concrete following the purposes of the project owner. However, in the contents of teaching and learning, there should be additional issues regarding investment feasibility and appropriate construction techniques so that learners are aware of important factors affecting project decision making. Besides, the training for students to find out the architectural design work from real projects is to enhance work skills that will affect the real work attitude in the future (Triyang, 2020).





#### 4.5 The discussion

Integration of academic services in conjunction with the teaching of architectural professions through project-based learning in this case study of The equine therapy resort project gives insight into the way of life context, the origin of the project location, and the project requirements in order to generate appropriate architecture that creates distinctive points to attract tourists and people in the target area. Therefore, in this case, for the guidelines for designing the living space of the project, there was the use of local materials like bamboo that is suitable for the context of the community. This project can promote the value of the project and the Thung Luang community to create incentives for tourists according to the objectives of the project owner.

The result of the mentioned operations expressed how to manage the course in architectural design courses through project-based learning, which was able to train students to practice an architectural profession in various aspects by themselves every step in terms of working both personal and group work. It promoted the learning in both Buddhist range, mental range, and skill range according to Bloom's educational objectives. Besides, the teaching and learning process under this mechanism could develop the skills and basic knowledge necessary to practice architecture as specified by the Council of Architects. Besides, this type of instructional management planning process is of the utmost importance. The instructor must clearly set the goals of the action plan in various steps and should explain to the entrepreneurs, learners, and all concerned parties so that they are thoroughly informed in order to achieve the achievement of academic services according to the objectives agreed by all parties.

#### 5. Conclusion

The process of integrating academic services together with the teaching and learning of the architectural profession through project-based learning management with the case study of the equine therapy resort design project in Thung Luang community, Tak Province can be summarized as follows:

5.1 Integration of academic service projects that are real projects in Thung Luang community areas, Tak province is a method of bringing architectural design process to practice, which is the form of work presented by the students through the method of presenting different advantages and disadvantages. Therefore, if there is development in terms of more details in the area of architecture and related engineering systems, it will become more feasible in terms of both construction and investment.

5.2 The strongest point of students was the creativity in the design of the buildings that make the presentation interesting. However, the main weakness of student workpieces was the lack of experience in the selection of materials, construction methods, and budget control, including methods for describing content, which was not yet concise. The above suggestions must be used as guidelines to improve the teaching and learning of Studio.

5.3 Suggestions from stakeholders showed that the model in real project-based architecture teaching and learning of the Academic Studio Plus group promoted clear architectural professional practice and helped create experiences outside of the classroom through learning with the real things. Therefore, this learning process will suit the citizenship qualification of the 21st century.

#### 6. Acknowledgments

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