COMPLETION REPORT

Chiang Mai University
Janjira Sukwai

【Subject of Research Project】

The 'Shakkei' Approach to Preserve Visual Integrity of Chiang Mai's Cultural Landscape

【Research Summury】

Safeguarding cultural heritage and sustainable development in mountainous historic cities necessitates the integration of indigenous beliefs associated with sacred mountains into urban planning and conservation strategies. This research delves into the exemplary practices of Japanese cities, Kyoto and Nara, which have been recognized for their successful incorporation of the belief and value of sacred mountains into their conservation systems. This is achieved through the implementation of the 'Shakkei（借景）' concept, which integrates views of significant landmarks with the mountain backdrop and designates them as protected scenic sites. This approach facilitates the practical implementation of monitoring and evaluation, focusing on the extent of the site's impact on the integrity of the cultural landscape or, alternatively, visual impact assessment.

In Kyoto city, there are several designated views of the mountain, including Street view（通りの眺め）, View from the garden（庭園からの眺め）, View of mountain ranges from rivers（山並みへの眺め）, View of the symbol on mountains（「しるし」への眺め）, Panoramic view（見晴らしの眺め）. In Nara city, these views are under categories of Linear view（見通し型眺望景観）, Entryway/gateway view（導入路・玄関口型眺望景観）, and Wide-open view（広がり型眺望景観）.

These views are control areas of buildings determined by the visual field and distances. Both cities established a 500-meter radius from the viewing spot as the close-distance zone, with the area extending beyond to the mountain as the middle- and far-distant zone. The visual field was set at 60 degrees for Nara city, and 45 degrees for Kyoto city. The vertical control of buildings was based on the specific height of the important feature within the visual field – below the symbol for Kyoto and a specific building height in the case of Nara city. Consequently, the closest area around features and mountains received the highest intensity of control compared to other areas.

Following the advantages of the criteria, GIS mapping and tools were used to test the application of the Shakkei concept in the context of Chiang Mai city. Considering the city's historical-cultural relationship with its sacred mountain, the study identified suitable viewing spots for the Suthep mountain, including Wiangkaew Palace, Intakin Temple, Chedi Luang Temple, Suan Dok Temple, and Suthep Road. The study proposed appropriate parameters for the designated mountain views in Chiang Mai city, including a 60-degree core visual field at a specific elevation level of 660 meters above mean sea level, with an adjacent and 500-m. close view zone. This investigation should be expanded to assess the impact of building height on the view. As a case study, examine the Suan Dok temple. The findings indicate that the most appropriate height restriction should be implemented in the vicinity of the temple.

Publication of the Results of Research Project:

Verbal Presentation (Date, Venue, Name of Conference, Title of Presentation, Presenter, etc.) The results of research project will be presented for The Digital Heritage International Congress 2025 on 8-12 September 2025 at the University of Siena, Italy on the title "**Building Height Assessment for Heritage Site's Surroundings using 3D-GIS Multiple Scenarios**" (on reviewing process)
Thesis (Name of Journal and its Date, Title and Author of Thesis, etc.)
Book (Publisher and Date of the Book, Title and Author of the Book, etc.)