Conservation Design Strategies and Methods for Historical Monument Districts in the Lower Northern Region of Thailand

Apisak Sindhuphak[*]

Hanuman-KMITL Researchers[*]

Abstract

The province of Sukhothai and Kamphaeng Phet located in the lower Northern region of Thailand has bordered three of prestige and historical sites registered with the UNESCO as the world heritage monuments. Recognized as: Sukhothai Ancient city, Si Satchanalai monuments, and old town Kamphaeng Phet, the purpose of this grouping established a sustainable community and tourism industry, with conservation of historical and heritage contents. Thus, the objective of this research is to establish a research center, which to provide information and further support arts and new design contents, propelling the local design communities into actions of redefine the impact of historical monuments as a way of life.

Reconnecting the community to the cultural heritage sites accentuated through three design and research strategies: *Constraint Challenges*, *Aesthetic Development*, and *Sustainability*. These components placed an emphasis on creation of aesthetic features, providing arts-architectural network space, and collaborative management policy–generated to support the locals, designers, and the administrative level within the historical site community.

Two design projects were generated from this conceptual design process, which are first, a map for local art and crafts artisans in three historical park areas and the other as a bicycle path aimed to conserve the historical park integrity of historical identity. Both of the projects considered the people in the community, the natural water canal environment, and the monuments, and employed the design methods to generate and create objective outputs that is tangible with Thai design identity.

Keywords: Thai Historical Monument Districts, Active Research Strategy, Constraint Challenge, Aesthetic Development, and Sustainability

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[*] Division of Architectural Education and Design, Faculty of Industrial Education King Mongkut's Institute of Technology Ladkrabang

Introduction

Journey of Exploration

This research is conducted as a continuous proposal for 2011-2014 research series with purpose to sustain and propel a cultural tourism to various riverside communities situated in the historical monumental district of Thailand. However, the initial result started as early as 2006, where the Department of Architectural Education and Design, an affiliation with Faculty of Industrial Education from King Mongkut Institute of Technology Ladkrabang Thailand (KMITL) began a quest for designing an exemplary community development campaign, which reflected the later policy of 12th ASEAN Summit meeting in 2007 to establish an ASEAN community by 2015 and the 13th ASEAN Summit meeting in the same year to further recognized and promoted ASEAN Socio-Cultural Community (ASCC), (International Law and Contributors, on-line, 2008).

From this commitment, part of the riverside or waterfront community market was first redeveloped at SamChuk in Supanburee Province. The sites provides atmospheric lifestyle based on the original shops and goods sold in the early 1900's in the region. In the following year, Klong Suan market, located in Samut Prakarn and Chacheangsao Province, was created to help the local to rediscover the charm of the riverside lifestyle that concluded as a 800 meters of wooden walk-path with shops, eateries, and small museum. These two projects build a fundamental strategy to help connect and conduct a research that provided unseen design insights. Several comments provided academic view, which suggested that the market needed to extend its life beyond just a regular site for goods exchange, but as a "living museum" for all to participate and create a community bonding (**Leesuwan, 2007**). This concept provided the push for the third project, as a beginning for the next phase in 2011 to redevelop a cultural market and Buddhist temple into a living community for Bang Plee market, Samut Prakarn Province. This project demonstrated a transition of two cultural spaces into a unibody of a functional site that served the purposes on the traditional and cultural level into a form of new economic community. In other words, the number of populations who visited the temple for daily prays and offerings can also extended their stay in a market space, conducting purchases and shopping chores for daily living. Later that year, a new projects also began to take shape through alternative idea for design against the natural disaster, KRAMS project initiated in the late 2011 and seen both drawn back and successes to counter the natural flooding. By reconfiguring cultural space, the three markets and the KRAMS project become the site for learning, where conceptualization of tradition and current practices of purchasing and appreciation of living with natural devastation and sustaining traditions simultaneously.

The inquiries arise of what cause of the existing riverside market? What factors aside from trading has to do with living by the river? How to sustain the lifestyle without sacrificing the changes and adjustment of the 21st century? Each riverside market established as a commercial and trading post, has the merit of trades transferred to part of knowledge that help drive the small villages to maintain and then strived to develop into a larger township or even as a region of ASEAN community? There is several unanswered development of projects after projects, where main objectives projected toward commodity that focused on the financial planning and investment. From the end of 2011, where Thailand faced a drawn back from the major flood through out the country, numerous riverfront properties however, suffered less damaged than the inland housing properties and communities. In the outcome of this disaster, the rate of housing damaged simply resulted that the design and constant adjustment to confront the nature powerful element at the riverfront community, has extracted more sound conclusions to how the house, the pier, the garden, or the public courtyard have been designed to counter or in some cases to lessen the effect of the natural disaster that occurred in the area. It is the collection of experience gained from each event that helps the population with the devastating cause. Thus, the process of building knowledge applied to cases directly or indirectly related to the event as an important learning step toward an avenue of design possibilities where humanity searched to complete learning cycle and the enticement of design solutions.

Transferring the design idea from heavily effected natural devastation area; the research team recognized the least effective outcomes and began developing a research strategy to counter further problematic sites. In the beginning of 2013, after the completion of KRAMS project (Living with Flood), the research team began the work on the new projects as supported by the current Thai government to develop and start to define solution for Cultural and Historical Communities, where some locations have already registered under UNESCO. The region of the lower Northern portion of the country: Sukhothai's Ancient city, Si Satchanalai monuments, and old town Kamphaeng Phet, which by this time has been part of the world heritage delegates, but lack the funding support, and technicality to execute what is crucial to complete and maintain the restoration and promotional factors deemed necessary. As depicted from figure 1, the area of this two provinces involved in this project encompassed three
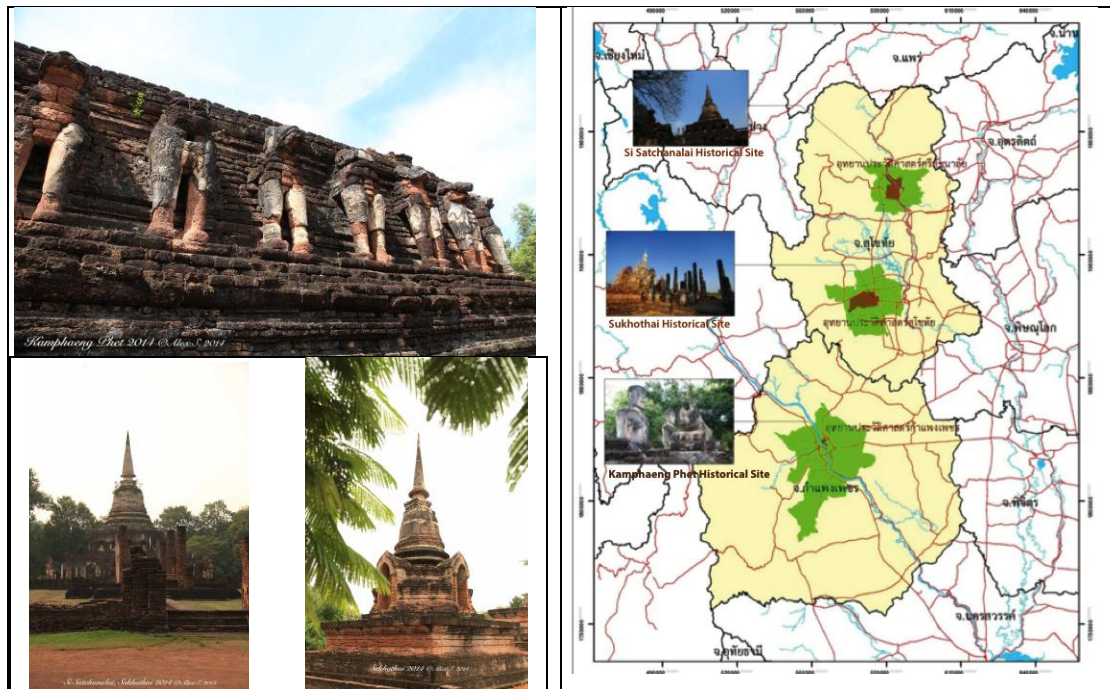
Figure 1:   *Map of the Historical Sites from top where Si Satchanalai located, the middle with Sukhothai, and the bottom of the three, Kamphaeng Phet, Lower Northern of Thailand.*

of the important historical site. Thus, having both the aesthetic and design methods as well as the several work that demonstrated ways of sustainable architecture and design, the team will tackle the issues around the world heritage site depend much of the experience of these three areas.

Our team approaches the new project with an outlook of transforming the knowledge derived from the earlier projects with two important factors: aesthetic development and sustainability. Many questions started to yield as influential factors toward the approach that has been established earlier; a reassessment for more structural outcome where the whole community can arrange and intertwine with the alternative social setting, became the team attempts to introduce and generate new ways of thinking to design and preserve such sites. As a result, the ways to reconfigure and to design to support the human rather to counter just the nature influences on the sites were to realize through the cultural beliefs and practices of the local people and eventually plan to further educate the people of all the elements involving the changes in technology and methods of communication that has been introduced within the heritage site in the past decade. The factor of "constraint challenge" rather than just the aesthetic beauty and sustainable result, has been inducted as part of the working philosophy.

The research continued to collect all the facets of these three strategies and explored further portion that accommodate needs and problematic concerns from various smaller township that make up the large community. By the late 2012, as the completion of KRAMS project help solidified the design and research strategy for the team, the meaning of ways to challenge design constraints, or to extend the aesthetic meanings, and to maintain the lifelong sustainable environment, the team decided to coined these three strategies; as a design and research center to promote cultural and heritage livings and architecture conservation toward a living and active sites that support tourism through its foundation of life, activities, and beliefs from a reflection of Thai cultural heritage. The need to establish a research center becomes part of the team vision in order to truly extend the knowledge and information gained from the field and active research.

Materials: Objectives
Discovery of Unification

The research concentrate to create a learning and knowledge based organization in Historical, Architectural, and Cultural Arts for the region, promoting tourism and sustainable conservation for Sukhothai's Ancient city, Si Satchanalai monuments, and old town Kamphaeng Phet: inclusion of knowledge nourishment to foster innovative solution and knowledge contribution at an international level. Furthermore, the team promotes the knowledge and the policy to explore and suggest methods of design for conservation tourism research center. These methodology were discovered from the field research on matters such as: ceramic wares processes, temple and religious structures, ceremonial space, and traditional public space: as market, piers, and trading posts. Therefore, the objective concluded to a formation of a research center deal with knowledge that pertain meaningful connection for the local and academic continuation for future references (Hall, 2012).

Studies conducted through collective local and national philosophy with new developing research to access knowledge in Historical, Architectural, and Cultural Arts of the region. This knowledge also promote tourism and sustainable conservation, supporting curriculum and academic to community services, and conserving national art and culture that becomes a centralized focus for the research. Thus, reinforcement on collaboration to sustain a balance between economic, society, and environment toward propelling the agenda on Creative Tourism connects a concentration on the benefits in value-added of sustainable tourism; creating foundation of cultural genuine contexts as a way of life, local wisdom, cultural arts, and history. From this new knowledge, the way to organize necessary strategy leads to the following three-cores strategies:

1. **Research Core (Constraint Challenges)**

Developing research, creative and innovative topics in Historical, Architectural, and Cultural Arts that also promote tourism and sustainable conservation to obtain international standard that aim to establish learning and continuous research organization. As a role of academic organization that concentrates with the development and research on Historical, Architectural, and Cultural Arts to promote tourism and sustainable conservation, as a research and academic publication with international reference source, and as a research that accepted and protected scope of intellectual property laws.

2. **Academic Service Core (Aesthetic Development)**

This second core focus on the contribution of knowledge with quality and supportive idea of the actual needs and incentives from the local community that becomes solution to extend academic into community. As a contribution of knowledge of Historical, Architectural, and Cultural Arts promoting tourism and sustainable conservation in turns develop into knowledge for the local community.

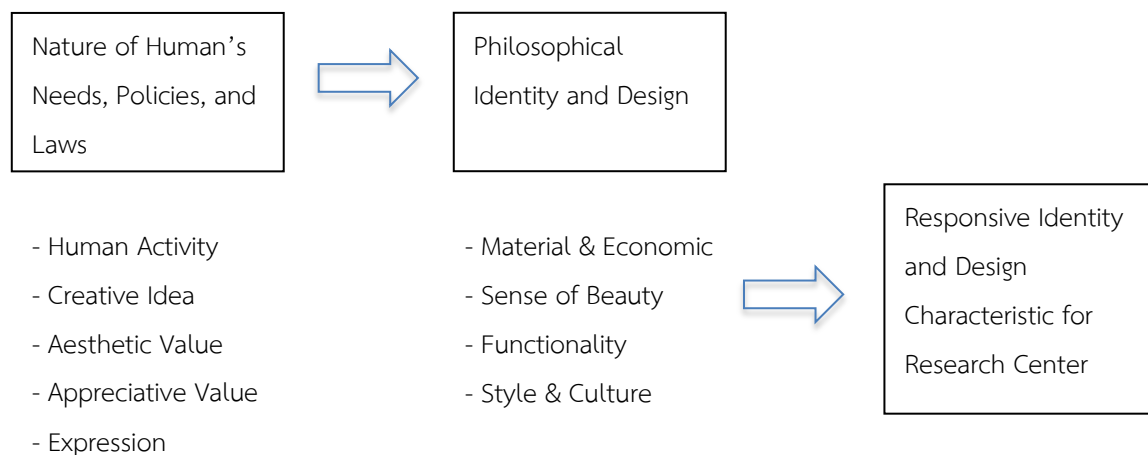3. **Art and Cultural Conservation Core (Sustainability)**

The last core of concentration deals with preservation and conservation of culture and the arts with efficient and effective outcomes that include interdisciplinary research and academic solution, where the concept of conservation and promotion of arts and culture, result with creative and sustainable outcome.

Materials: Method and Tactics
Searching with Less Complexity

Since the center generated the idea from the tactic provided from the KRAMs projects, each strategies core also consists of common components, which are the tactics that can be apply to all three cores for evaluation. The team employed several idea of thinking such as systematic of management through cultural aspect (Best, 2010); redefining the art and cultural object significant (Hall, 2012); and categorized the object through research for new innovative thinking (Kottas, 2011). Through a diagram indicated from figure 2, the sequence of each considered components help define the constraint, the aesthetic, and sustainable possibility. This is where responsibility and clarified reasons and research topic best reflects the site requirement. Using the components related to the core strategy for example, *appreciative value* could be defined in various terms according to the population studies on the level of stability or finding satisfactory outcomes that deals with aesthetic appreciation that redesigns to cater styling and sense of timelessness. Conducting this matter and meaningful terms for the research, depending on the main objective have based much of its value with the

definition derived from the population group's interest and requests. The inquiry intended to extracted the quality of methods employed, and raised issues on which portion of the work these components become the key matters of unlocking the barrier to best represent the collected data as an information collection achievement or as design solutions.


Nature of Human's Needs, Policies, and Laws	Philosophical Identity and Design	Responsive Identity and Design Characteristic for Research Center
- Human Activity	- Material & Economic	
- Creative Idea	- Sense of Beauty	
- Aesthetic Value	- Functionality	
- Appreciative Value	- Style & Culture	
- Expression		

Figure 2: *Component and Tactics Diagram for the Research Center, 2013*

The affect and the latent effect of the previous design to prevent flood and overrun from the river help reconcile some of the methods needed to use for this research. As defining of all related components for all three strategies cores, the view on all core tactics has no longer exist as a single unit, but rather a systematic unit that depend and relies much of its distinguish existent to counter the problem in order to deriving toward a better design solution. This is a collaborative intervention as stated by Best (2010), which concern over the overall performance of the design as each stages must considered as an interchangeable unit that also ready to be retune, adjust, or replace for improvement. Therefore, the idea of a physical method and tactics used for this project must take shape, symbolic form as of a shifting geometry that still can be calculate but can shift its formation to fit any situations (Clay, 2009); (Hall, 2012). Where the solution also still remain open for obtainment for any additional idea or contexts. The research team considered the approach much from the previous and experience gained from the past fieldwork, yet the idea of a formation to place into action as mentioned seemed to only be a way for the team to conduct more sound research that reflect the urgent problem solving that would specific cater to the whole constant and various form of organization or communities that are among the population group for this sites. From figure 3, the triangular represent the research center with three

strategies core located at each angles. The point where each strategy core occupied can represent the area that the core expresses its influence and where it is most effective for that location. As each components engaged with the rotating triangular cores, the contents in evaluation have also encompassed the nature and context of each core. Thus, *aesthetic value*, *expression*, and *human activity* reflect more from the context of "constraint challenge" at this position, while other components reflect other cores that closest to its location relative to the circle components position. There is a possibility for each component to engage with all three-core strategies, which after a complete clockwise rotation through the core, each component completed the context interaction by encompassing all six characteristics through the following combination: 1.Expression-Constraint Challenge, 2. Expression-Constraint Challenge/Aesthetic Development, 3.Expression- Aesthetic Development, 4.Expression-Aesthetic Development/ Sustainability, 5.Expression-Sustainability, and 6.Expression-Sustainability/ Constraint Challenge. Nonetheless, each components can also encompassed all three strategy cores as it has considered to interact with all three as it rotated, so it is also a valid assumption that the overall characteristic of each component is now seven, instead of just six with all three strategy through combination with example of: Expression-Constraint Challenge/ Aesthetic Development/ Sustainability.
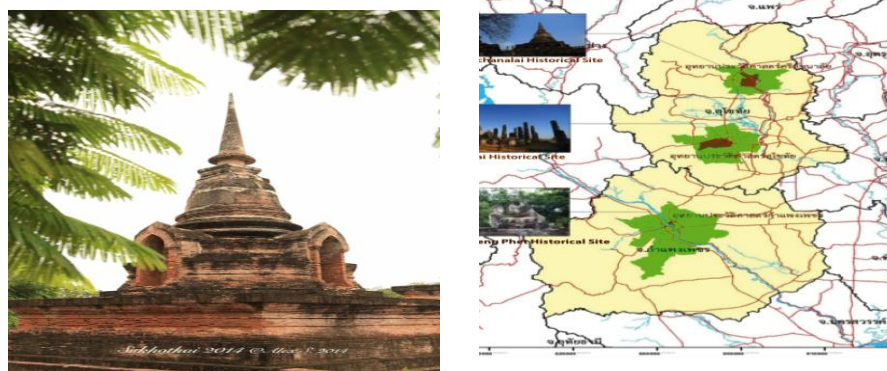
Figure 3: (Left) Triangular Core (Right) Simulated Triangular Core with Circle of 7 Components, 2013

From these combinations generated from the interaction of the Triangular Core and the Circle Components, the research can construct a combination of research questions posted with valid and tangible approach with set of questions multiply by the numbers of component depending on the selection of related factors (components) employed for the conceptualizing the methods for the research. Following this concept, the research posted initial 49 (7x7) inquiries in regards to the possible research ideas to strengthen the supportive

contents in arranging the structure for the research center for the historical sites at Sukhothai and Kamphaeng Phet Provinces. Among these inquiries, the factor involved area and heritage features such as: local product development, architectural space interaction, cultural public space development, riverfront recreation activity, educational and cultural space, and heritage interaction space for performance and special events. However, the collaborative aspect has played an important role to which the team needs to consider other organizations and related communities involved with the world heritage sites–which demonstrate repetitive effort of conservation and sustaining the tourism industry needed to assure the overall innovative outcomes from various materials existed (Kottas, 2011). The combination of tactics created to cater numerous influential heritage sites and its population groups. The following are the research tactics refined through working effort of both academic and general public interest as well as requests from the non-profits organizations involving with the sites:

Tactics 1.   Concentrate on Center of Academic, research, and conservation of art and culture: with 4 indicators:

1. Data quantity from the knowledge base information center in historical, architectural, and cultural arts with sustainable conservation.

2. Completed data served as an educational contribution for future reference source.

3. Satisfaction level of the visitors and patronages.

4. Projects generate from the center to collaborate at an international level.

Tactics 2.   Quality team members with dynamic characteristic and professional skill in ASEAN: with 3 indicators

1. Increase of active members

2. Member's achievement are published and recognized in ASEAN

3. Proportion of Thai academia and researcher to ASEAN academia and researcher.

Tactics 3.   Organizing academic collaboration between team members with national and international level: with 3 indicators

1. Increase of collaboration with national and international organization

2. Member's work and projects are published and recognized in national and international level.

3. Proportion of Thai academia and researcher to an international academia and researcher.

Tactics 4.   **Establishment of knowledge base system: with 2 indicators**

      1. Data quantity generates a recognizable knowledge base system

   2. Data quantity to gain access to knowledge base system

Tactics 5.   **Transaction of Research to local and community level to solve social issues and/or developing commercial venues: with 3 indicators**

      1. Collection of innovative research contributed to local development.

      2. Collection of Intellectual Property License for use and reference in academic, research, or commercial base.

      3. Collection of Patent Pending Copyrights License for use and reference in academic, research, or commercial base.

Through comprehensive variation of these tactics categories, the result of components characteristic selection become part of the research actions that gives the research the context that reconnect the need of the community and also indicate areas of collaboration. In addition to the part of creative and necessary research context gathered, the tactics are used to expand the correlation between what stated as initial design solution to the evaluated design proposal (Wongsingthong, 2002). This is to help researcher arrange adequate objective and framework for each topic once the relation is drawn, as well as to create a foundation for the research center from the knowledge solidified at the heritage sites of the two provinces.

Results

Expressing the tangible outcomes

From gathering and establishing the 5 tactics, the research extracted its core idea into questions and interview scripts and begins to compose research topics for the sites. The process of extracting the architectural features, spaces, and utilization of resources encompassed all three strategies core, while identified the invisible variables discovered during fieldwork and meetings with personnel and administrative officials from the heritage sites. Furthermore, using the prior process to evaluate several previous architectural designs and management projects with the methods of generating research topic and tactics as guideline, each research topics can be refer and retrace of its developmental stage within research procedures. As mentioned earlier, the concept began from generating texts and vocabulary gathered through specific context for the process. Figure 4, demonstrates the position of the actual keywords in relation to the triangular core of the three strategies.
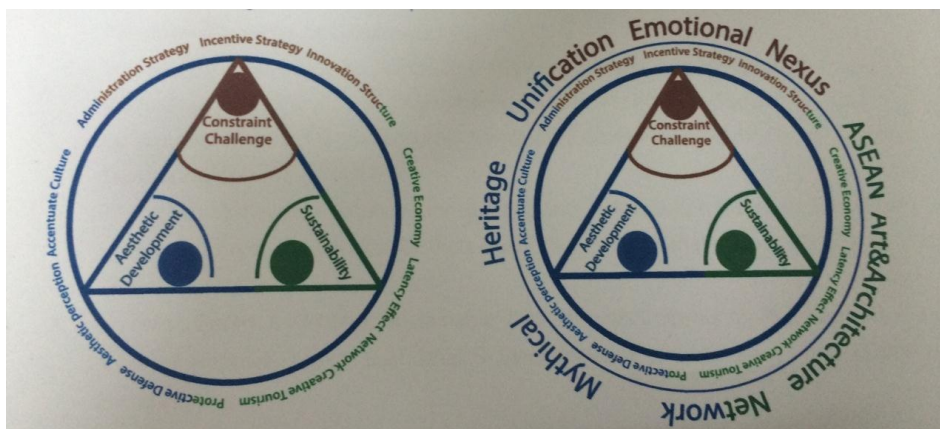
Figure 4: *(Left) Actual Triangular Core with Keywords Circle of 9 Components; (Right) Actual Triangular Core with Specific Circle of 8 Components (extended from Keyword Circle Components), 2013.*

These examples are part of the collection of phrases or words that coined and considered to be as significant keyword for the research. The words such as: Administration Strategy, Incentive Strategy, Innovation structure, Protective defense, or other several have been generated and collected as keywords through previous literature review and fieldwork related with the topics involved with heritage and cultural design. These words could then be placed on the circular components to decipher alternative relation, which can help outline a new direction to which keywords or expression can relate to the design topic that each research has focused on as framework (D. Bun Mee Na Chompare, 2007). Subsequently, the words selected are based from a design collection library and fieldwork conducted through architectural design work and KRAMs project, 2011-2013. These collective words shown an immense impact toward the design process from an earlier stage and helped streamline the thinking process to arrive with conclusive suggestions where those keywords has a high possibility to help generate further research development. At this juncture, the research team was able to create the following research topics to further strengthen the reason of establishing a research center:

1. Legislative Law and Administration Strategy for Monumental Heritage and Cultural Sites: Specialized Monumental Areas of Historical Districts-Sukhothai, Si Satchanalai, and Kamphaeng Phet *(Unification-Constraint Challenge)*

2. Incentive Strategy and Methods as Supportive Factors for Conserving Heritage Building Sites and Cultural Community for Specialized Monumental Areas of Historical Districts-Sukhothai, Si Satchanalai, and Kamphaeng Phet *(Emotional-Constraint Challenge)*

3. Fundamental Innovative Structure for a World Heritage Community and City for Specialized Monumental Areas of Historical Districts-Sukhothai, Si Satchanalai, and Kamphaeng Phet (*Nexus-Constraint Challenge*)

4. Methods on Atmospheric Development for Aesthetic Perception of Historical Monumental Region for Sukhothai, Si Satchanalai, and Kamphaeng Phet (*Mythical- Aesthetic Development*)

5. Methods on Protective and Defense of Local Community Heritage to Promote Tourism for Monument Areas of Historical Districts-Sukhothai, Si Satchanalai, and Kamphaeng Phet (*Heritage- Aesthetic Development*)

6. Socio-Geographic Study on Specialized Monumental Areas of Historical Districts-Sukhothai, Si Satchanalai, and Kamphaeng Phet to Accentuate Specific Cultural Community Identity for Tourism and Sustainable Conservation (*Emotional- Aesthetic Development*)

7. Interactive Multimedia Database for Building and Historical Structures in Specialized Monument Areas of Historical Districts-Sukhothai, Si Satchanalai, and Kamphaeng Phet (*Network- Aesthetic Development*)

8. Indicators Factor for Historic Sustainable Tourism with Community Representatives from Historical Heritage District- Sukhothai, Si Satchanalai, and Kamphaeng Phet (*ASEAN- Sustainability*)

9. Creative Economy for Tourism on Specialized Monument Areas of Historical Districts-Sukhothai, Si Satchanalai, and Kamphaeng Phet (*Art & Architecture- Sustainability*)

10. Latency Effect from the Tourism Development on the Community and Surrounded Vicinity of Historical Districts-Sukhothai, Si Satchanalai, and Kamphaeng Phet (*Unification- Sustainability*)

11. Administrative Management Strategy of Creative Tourism in Specialized Monumental Areas of Historical Districts Sukhothai, Si Satchanalai, and Kamphaeng Phet of Southeast Asia Tourism Network Community (*Network- Sustainability*)

Although the actual combination of research topics could generate 216 (3x9)8) research possibilities for the first circular component (one keyword for each triangular core), 11 were selected for further development. By means of estimation where at this point, only 5% of the triangular core and circle component interaction are used for generating research topics. There are other 205 or about 95% of research possibility left to explore in the future. From these 11 topics, the keywords initially generated through the first circle component (figure 4-left), which yielded close to 63 topics, but this combination would not represent the actual need included with the finalized keyword consideration, gathered from the personnel and

administrative officials from the historical sites field interview. For this reason, the specific 8 components (figure 4-right) was created to represent the process of both previous evaluation of past design projects along with the new collections evaluated and then applied to the combination estimation that reflected the representation of new population group from all three: Sukhothai, Si Sat Chanalai, and Kamphaeng Phet heritage sites personnel. In fact, the 9 keywords (direct) are related to the 8 keywords (project) through results of combination calculation and evaluation, which eventually set off a framework to derive meaningful research topics for reinforcing the necessity establishment of a research center for the historical site project. The following table1 demonstrates an accumulation of research topic with the prospective outcome and relationship of its research value from the findings after the evaluation with administrative personnel from the historical site. Three research topics falls under the constraint challenge, while four are categorized as aesthetic development, with the last four associated with sustainability realm.

*Table 1: Overall Summarization Table of the research topics for the Historical Sites 2013*

Research Topics	Research Strategy	Cultural/Design Components (Direct keywords)	Project Cultural/ Design Components (Projects keywords)	Project Direction
Topic 1	*Constraint Challenge*	Administrative Strategy	Unification	1 of the three Constraint Challenge
Topic 2	*Constraint Challenge*	Incentive Strategy	Emotional	1 of the three Constraint Challenge
Topic 3	*Constraint Challenge*	Innovative Structure	Nexus	1 of the three Constraint Challenge
Topic 4	*Aesthetic Development*	Aesthetic Perception	Mythical	1 of the four Aesthetic Dev.
Topic 5	*Aesthetic Development*	Protective and Defense	Heritage	1 of the four Aesthetic Dev.
Topic 6	*Aesthetic Development*	Accentuate Cultural Community	Emotional	1 of the four Aesthetic Dev.
Topic 7	*Aesthetic Development*	Interactive Multimedia	Network Unification	1 of the four Aesthetic Dev.
Topic 8	Sustainability	Sustainable Indicator	ASEAN	1 of the four Sustainability
Topic 9	Sustainability	Creative Economy	Art & Architecture	1 of the four Sustainability
Topic 10	Sustainability	Latent Effect	Unification	1 of the four Sustainability
Topic 11	Sustainability	Creative Network Tourism	Network	1 of the four Sustainability

On the design perspective, the first major proclamations based from context of all three strategies were to develop the physical entry path along an old canal known as "Mae Rumpun", consists with a bicycle path in addition to an already existed bicycle tour inside the Sukhothai's heritage historical site. By reuniting the ancient city site entrance with this canal passage from main town 6 kilometers from the east, the project improves a visual impact by establishing a panoramic view to the entrance, and redesign of the waterfront community to rejuvenate a traditional lifestyle of "life by the water" back to the community along the new bike path. The two factors from the design of the old canal and the entrance by the water will also support the local artisans with gallery and activity space to install and showcase their works through small shops and living units, designed to suit the landscape of the water canal community as well as featuring a combination of resting area with information system from traditional style of Sukhothai Era. As seen from figure 5-7, some of the initial sketches made by the research team through the fieldwork and evaluation of the canal-front landscape reflected the area's cultural landscape and architecture based from water and life associated with canal route. Where in figure 8, the style of temple existed around the canal vicinity and a restored temple erected around the water-inlet of the historical park, also shows the architectural style of past Sukhothai articulation.
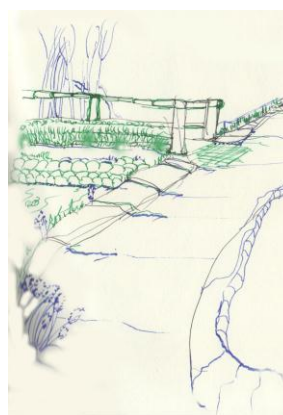
Figure 5: Wild flower and vegetation around Sukhothai. *Figure 6*: Bridge and Bike path layout
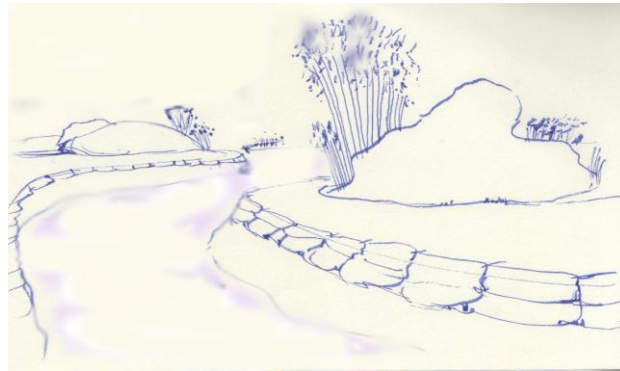
Figure 7: *Proposed Bike path layouts with garden arrangement consist of plants and rock formation visual enhancement.*

Figure 8 *(left) Wat Trapang Ngean (right) Portion of restored "Stupa" at Wat Sa Si, Sukhothai Heritage Park*

Conclusion

The Effective Foundation to Stable Solution

The selected 11 research topics combined aesthetic features, providing arts and architectural network space, and collaborative management policy to build a design entity through the combination of the three core strategies. Although all 11 research plans have been structured to utilize with sustainable solutions for the heritage sites, the objectives outcomes may reflect other approaches necessary to establish a research center, of which not only initialized to collaborate between the research team and the historical administrative personnel, but also the field work conducted with the people from local community and commercial organizations. At this point, several historical site administrators have realized the impact of having a physical identity that refined each research topics into the actual creation. The collaboration will be one of a benefit in solidifying three strategy cores into concrete knowledge and data information, where all collaborative team could form a secured/research space.

The following figures are several on-site features orientated toward the gathering of database from the three historical locations. In Figure 9a, 9b, and 9c, 10, and 11 displayed the spaces and lifestyle presence all around the community and a mapping process of three historical communities conducted in 2013-2014. This includes panoramic space studies for town circulation, and the water boundaries to clarify the location capacity and proportion of the communities; which the team included as database where despite any future design proposals within these three locations will consist adequate information from the created database to help each proposal to design accordingly to the community's human resources, natural materials, environmental contexts, and community agreement. Figure 10a, 10b, and 10c then, followed with location mapping design process–created to establish local artists and craftsman data gathered from three heritage locations. For that particular mapping process of the area, figure 11

Figure 9a.

Figure 9b.

Figure 9c.

Figure 10a: Graphic icons sketch from an earlier in-field research, 2014

Figure10b: Map marking for art and cultural locations, 2014

Figure 10c: Proposed map icons, all graphic designed under the conceptualization of Triangular components.
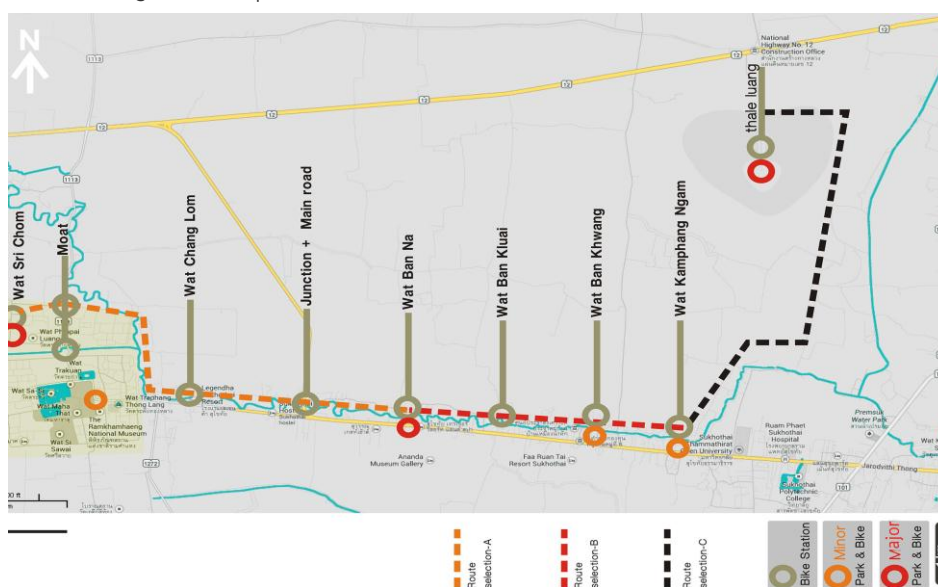

Figure 11. Bicycle Route A, B, and C for Klong "Mae Rumpun", Sukhothai, 2014

concluded the phase of design strategy, which shown a proposed marking for minor and major station for the bicycle tourism strategy along the "Mae Rumpun" canal with three proposed bicycle route paths A, B, and C, according to activity and distance of each path.

The various bicycle paths allow the research team to employ the use of combination of Triangular Core and Circle component to extract a new perspective to create and continue the work with an effective research method and design process. Finally, figure 12 shows housing style for a rest area suspended as structure over into "Mae Rumpun" canal passage. This is several of initial design proposed for the local authority to consider as an architectural piece that reflect the heritage style with alternative architectural features to encompass the tree as part of this designed structure. The rest area extends over into the canal and encompassed to protect this natural tree, creating an interactive space between nature and tourists leisure activity. This type of design visualization depicted through area and community which serves as features for the process of creating a body of cultural knowledge with intention to eventually create a new design language to sustain traditional style into a new research center that best suited for the community. As either, a physical or a virtual space, this future research center hopes to symbolize a foundation for further exploration, cultural treasure, innovative design, and educational opportunity, while conserving Thai traditional style and embracing new building technological challenges.

Figure 12. Rest Area along "Mae Rumpun" canal with local architectural features, 2014.

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