



Establishing an Assessment Criteria System for Architectural Heritage of Colonial Educational Buildings in Hanoi

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Abstract: A number of educational buildings were built up by the French in Hanoi during their dominance. Most of these buildings still exist in the downtown area and have become an integral part of the valuable heritage, and their preservation is increasingly imperative. To preserve and promote more efficiently the values of the colonial building heritage assets, there is a need of a set of criteria for an assessment and classification. This paper presents the development of an assessment criteria system for the architectural heritage of colonial educational buildings in Hanoi. According to the proposals, colonial educational buildings can be classified into three groups of Special Value, Notable Value, Average Value. A set of criteria including factors related to both the internal and external values of these buildings have been proposed and validated with expert judgements. Each criterion then is incorporated with a set of scores showing the value it can bring to a colonial educational building to be assessed. The set of criteria and their scores can be used by the city authority to establish regulations to preserve and promote heritage values of the colonial educational buildings in Hanoi.

Keywords: Hanoi, colonial architectural heritage, colonial educational buildings, heritage conservation

1. Introduction

From 1902, Hanoi became the capital city of French Indochina (Papin, 2001) during the dominance of the French on the entire territory of Vietnam. A French educational system had been gradually established, which consists of three levels: primary, secondary and tertiary, in order to replace the feudalist educational system (Nguyen, 2009, Tran, 2010). Thanks to that, Hanoi was turned into a cultural center of Indochina. Apart from administrative, commercial and residential buildings, several schools were constructed in Hanoi to secure a place for educating a large number of French, then also Vietnamese students. In 1906, Indochina University was brought into use and then a number of colleges such as College of Education, Indochina College of Arts, etc. were inaugurated (Tran, 2012). Selected colonial educational buildings in Hanoi are presented in Table 1.

Table 1 - Selected colonial educational buildings in Hanoi

Projects	Currently used as
Ham Long School (École Ham Long)	Ngo Sy Lien Primary School
Brieu Middle School (École Brieu)	Thanh Quan Primary School
Paul Bert College (Collège Paul Bert)	Trung Vuong Junior High School
French Girls Superior Primary School (École Primaire Superieure Des Filles Francaisesx)	Office of the Ministry of Justice
Albert Sarraut High School (Grand Lycée Albert Sarraut)	Office of the External Relations Committee and the Party Central Organizing Committee
Protectorate High School (Lycée Du Protectorat)	Chu Van An High School
Indochinese University (Universite Indochinoise)	Hanoi National University and Medicine University
Hanoi School of Fine Arts (École Des Beaux-Arts de Hanoi)	Vietnam Arts University
City University of Indochina (Cite Universitaire De L'Indochine)	Hanoi Polytechnique University

In the central area of Hanoi, there still exist in total 18 educational buildings being built in the colonial period. Among them, 11 buildings still keep their original functions, while five of them have been transformed into administrative offices, hospitals, hotels; the last two have some parts which were constructed in colonial styles demolished (Brusq and Selva, 2011, Vu, Bolot et al., 2014, Tran, 2016). These buildings were all built 80 years ago, and many of them are characterized with beautiful architecture, planned in well-selected locations of the city and therefore, have become an important part of Hanoi's colonial architectural heritage with great values in terms of history, culture, social significance and aesthetics.

Literature shows that the architectural heritage needs to be assessed in terms of sustainability (Boarin, Guglielmino et al., 2014) for better energy usage and less environmental impact, rehabilitation (Al-Sakkaf, Zayed et al., 2019), or adaptive reuse (Elsorady, 2014). The purposes for carrying out the assessment include: to discover the best principles sustainability aspects in both heritage and modern buildings for future use when producing new high-performance buildings (Boarin, Guglielmino et al., 2014), to evaluate the compatibility of new uses for heritage buildings (Elsorady, 2014), to justify the costs that restoration and conservation entail (Haddad, 2007), etc. Previous studies have developed a set of criteria which have been used for each assessment purpose.

Over the past years, while focusing on economic and urban development, Hanoi seemed to pay less attention to preserving architectural heritage due to the misconceptions in heritage preservation. As a results, many colonial architectural heritage buildings, including educational buildings have been dilapidated, ruined or even partially destroyed due to human activities. This has caused a huge loss of both tangible and intangible values, including also historical, cultural, social and community-oriented meanings. However, the Government has recently issued a system of legal documents for the purpose of promoting the preservation of architectural heritage, namely Cultural Heritage Law, Capital City Law and Regulations on preservation, rehabilitation, and restoration of historical - cultural relics and landscapes which have set up more stable legal bases for the preservation work. However, colonial architecture heritage has not been included in the scope of these regulations and laws due to that they are not being considered in any groups that these legal documents cover. This paper presents the results from a research into establishing an assessment criteria system for architectural heritage of colonial educational buildings in Hanoi, which can be considered as the foundation for developing a preservation strategy and regulations on colonial architectural heritage preservation, including colonial educational buildings.

2. Literature Review

Literature shows the need of developing assessment criteria for the heritage buildings, due to their historical uniqueness. For the purpose of the modern use of ancient theatres and odea?, criteria should consider parameters related to architecture, acoustic qualities and also human comfort (Haddad, 2007). For a villa with an adaptive use as a museum, the indicators considered include architectural integrity, public perception, form and physical characteristics, building function, sustainable adaptation (Elsorady, 2014). Heritage buildings are also assessed as green buildings with criteria set by the rating systems such as LEED, Green Globe, BREAM, ITACA etc. (Al-Sakkaf, Zayed et al., 2019). However, since sustainability of the building process may already be integrated in new constructions, but not for historic buildings, modifications of those rating systems may be needed to bridge the gap between energy efficiency, environmental

sustainability and cultural heritage preservation (Boarin, Guglielmino et al., 2014). For assessing the sustainability of the buildings, four main criteria of materials, environmental design, economic concerns and social concerns have been proposed (Mushtaha, Shamsuzzaman et al., 2020). However, international researchers emphasize the need of identify the risk of heritage architecture and establish a set of criteria in order to prioritize the related preservation projects (Ruiz-Jaramillo, Muñoz-González et al., 2020). This is what we also need in Vietnam for the better use of the Colonial Educational Buildings in Hanoi.

Previously, there were a number of research projects related to the preservation of colonial architectural heritage in Hanoi, which discussed the development of a heritage assessment criteria system, but they focused on buildings in the Old French Quarter (Larrouse and Huau, 2008), on the villas in Hanoi City (Doan, 2011), colonial architectural heritage in general in Hanoi (Tran, 2016), or the French townhouses in Hanoi's Old Quarter (Nguyen, 2017). Each study has its own purpose, so they targeted different sets of criteria for classifying French buildings in Hanoi, as summarized in Table 2.

Table 2 - Sets of classification criteria in selected previous research projects

Project Names & Criteria	Value range (points)
Reviewing, classifying, creating a list of villas (Doan, 2011)	
Historical and cultural value	0 - 15
Architectural value	0 - 35
Value of landscape	0 - 20
Originality	0 - 20
Performance and usage	0 - 10
Identifying colonial architectural heritage in Hanoi and sustainable conservation solutions (Tran, 2016)	
Historical value	0 - 10
Chronological value	0 - 10
Cultural value	0 - 10
Social value	0 - 10
Artistic value	0 - 15
Technology value and construction conditions	0 - 10
Landscape and planning value	0 - 10
French townhouses in Hanoi's Old Quarter (Nguyen, 2017)	
Historical - cultural value	0 - 10
Planning value - urban landscape	0 - 15
Architectural value	0 - 50
Originality	0 - 15
Contemporariness	0 - 10

Based on the points each of the building accumulated (the maximum total points is 100), they will be classified into groups. Villas are classified into 4 groups (Doan, 2011), public buildings are classified into 3 groups, and the French townhouses in Hanoi's Old Quarter can be put in one of 3 designated groups (Table 3).

Different policies for reuse and conservation, rehabilitation of heritage buildings have been applied for buildings in different groups. It is noted that in the classification of Doan and Tran, buildings with points lower than 20 will not go into the lists; it means that they will not be considered as heritage buildings to be regulated. The results of the research Reviewing, classifying, creating list of villas in Hanoi city has been applied by the city government to promulgate regulations on management and use of old villas built before 1954 in Hanoi (Hanoi People's Committee, 2013). According to this regulation, the criteria are scored based on the level of the contribution to the value of the heritage building on a scale of 100. To evaluate, score, and rank heritage buildings, the studies are divided into two phases: Phase One - The survey phase, conducted by researchers in the field, and Phase Two - the evaluation and ranking phase, conducted by conservation experts on the basis of survey results (mainly through photographs of the buildings).

Table 3 - Heritage building classifications

Groups proposed	Value range (points)
Villas (Doan, 2011)	
Special Value Villa - Group 1	70-100
High Value Group - Group 2	50 - 69
Medium Value Group - Group 3	20 - 49
Colonial architectural heritage buildings (Tran, 2016)	
Group of buildings with special value	75-100
Group of buildings with high value	50 - 74
Group of buildings with average value	20 - 49
French townhouses in Hanoi's Old Quarter (Nguyen, 2017)	
Houses with special value	67-100
High-value houses	50 - 66.5
Low-value houses	below 50

However, the scoring method for each criterion by the range of points, for example from 1 to 5 points, from 5 to 10 points, etc. and the fact that the conservation experts score based on the results of the survey period has also led to a small number of errors in the ranking of heritage buildings. The division into two phases also changes the ranking results because in the time gap between the two phases (usually about one year due to the large number of buildings, it requires some time to process the data collected). There may have been some changes to the heritage buildings. Therefore, adjustments will have to be made after publishing the ranking results of heritage buildings by bringing the expert team to the field to survey and conduct the evaluation and ranking again.

3. Research Methodology

This research project aims to develop a set of assessment criteria for the architectural heritage of colonial educational buildings in Hanoi. For the ease of incorporating into the regulation and consistency with the existing classification systems, the criteria will use fixed score criteria, with points ranging for different groups, like in the previous works of Doan (Doan, 2011), Nguyen (Nguyen, 2017) and Tran (Tran, 2016).

The set of criteria has been established using a hybrid research approach. The research team at first hire a team to do the fieldwork, i.e. to meter and take photograph at 16 surviving colonial educational buildings. Then, the team work together to propose an initial set of criteria, based on the analysis of data collected, considering the sets of criteria found in the literature as well as the current relevant regulations. Seven heritage conservation experts were then invited to brainstorm on the proposed initial set of criteria. Comments and proposed revision by the experts have been reviewed by the team and the set of initial criteria were revised accordingly to get the final validated set of criteria.

4. Research Results

4.1 Establishing the Groups of Values and Value-Related Criteria

The set of criteria is built on the basis of reference criteria systems to determine the value of heritage buildings widely recognized in the country and abroad (Doan, 2011, Hanoi People's Committee, 2013, Tran, 2016, Nguyen, 2017). The set of criteria must ensure the assessment of the value of the heritage building itself and the factors that increase the value of the heritage building in order to provide a full assessment of the tangible and intangible values of schools of colonial architectural heritage. Therefore, the initial criteria were developed on the basis of both tangible and intangible values that make up the overall value of the heritage building, which are divided into two groups of criteria: internal and external groups. Internal group consists of criteria which represent the value of the building itself in relation to the heritage conservation. External group consists of criteria that can bring value-added to the buildings.

Each of the criteria is scored based on the assessment of the contribution of each criterion to the overall value of the heritage building, with consultation of experts on heritage conservation in Hanoi. On the basis of the total score of the criteria and the compilation of criteria, the research team classified the architectural heritage of colonial educational buildings in Hanoi into three levels of Special Value - Notable Value - Average Value. Since all of the educational heritage buildings in Hanoi are worth preservation, only three groups have been used instead of four as in the work of Tran (Tran, 2016) or Doan (Doan, 2011).

The set of criteria for evaluating the value of the colonial educational buildings in Hanoi has been proposed by the research team and validated with the experts from the National University of Civil Engineering and Vietnam Association of Architects, will be discussed below.

** Group of internal criteria:*

- Historical values relative to educational buildings where the anti-French or anti-colonial movements among students happened and their leaders, for example, the establishment and operation of the Hanoi Resistance Students’ Resistance Union at the schools: Lycée du Protectorat, Petit Lycée, Collège Paul Bert.
- Chronological values: depending on the ages of the buildings.
- Cultural values expressed in the educational building design style show the French-Vietnamese architectural interference through the incorporation of indigenous traditional architectural parts and details into French buildings with functional space. For example, schools designed in Indochina style such as Université Indochinoise or École des Beaux Arts de l’Indochine, and/or places where Vietnamese cultural celebrities have taught and learned.
- The architectural values are shown through the beauty of the buildings (aesthetics).
- Climate adaptability is demonstrated in the buildings that have built-in solutions to adapt to the tropical climate of Vietnam such as preventing the heat, shading, protecting the building from splashing rain, and reducing the effect of moisture, etc.
- The preservation of function is shown by buildings which still keep their original function as educational buildings, which allows them to preserve large spaces such as school grounds, and small spaces like classrooms. In addition, the schools also have large spaces that allow adding new functional rooms such as multi-purpose hall, multi-media library and so on, which are also rated at a higher score.

** Group of external criteria:*

- On-site values: the campus value is reflected in schools with a spacious green campus that is beautifully designed and often maintained like the campus at Chu Van An High School (formerly Lycée du Protectorat); The school gates and the fences still remain original and turn out to be highly aesthetic like the case of Chu Van An school, which will also increase the value of the campus.
- Off-site values: Off-campus values demonstrate the ability of the to make a major contribution to colonial-era old town landscapes such as the Université Indochinoise in an area with numerous colonial buildings along Ly Thuong Kiet street and the University is located in front of a flower garden so a broad view can be secured.

4.2 Developing a Score Scale for the Criteria

Each of the criterion needs a set of value, which can be referred to as score scale, by which the buildings can be scored. The proposed score scale must ensure the colonial educational building classification conforming the current legal documents. The score scale is useful for ranking the colonial educational buildings values on a clearly categorized system and a scientifically well-developed method.

The scale of each criterion is based on its importance to the value of the heritage building and the conservation and promotion of the value. The criteria group for weighing the value of the building itself is related to the preservation of colonial schools in the educational development process, the criteria group for evaluating the factors that increase the value of the building is related to promoting the value of colonial schools in the process of urban development in Hanoi. The total score of two criteria groups including the component criteria is 30, which is broken down in Table 4. The internal criteria group for evaluating the value of the building itself has a maximum total score of 20, divided into three categories: Type A with score ≥ 15 , Type B with score ≥ 10 , Type C with score < 10 . This classification is related to the school ratings and will be discussed later.

Table 4 - Value assessment criteria system for colonial schools and score level for each criteria

Key criteria	Sub-criteria	Score
<i>Internal criteria: the group for the value of the building itself</i>		
Historical value	Buildings that are associated with historical events	2
	Buildings that are associated with historical celebrities	1
Chronological value	Buildings that are 100 years old or more	2
	Buildings that are less than 100 years old	1
Cultural value	Buildings that show the French - Vietnamese cultural interference during the colonial period	2
	Buildings associated with activities of cultural celebrities	1

Architectural value	Buildings that are characterized or typical for an architectural style	2
	Buildings that were designed in beautiful built forms and well-proportioned	2
	Buildings that were well-decorated with outstanding details	1
Climate adaptability	Buildings that can be noted for solutions that help the buildings adapt themselves to Vietnam's tropical climate conditions	2
Preservation of function	Buildings that still maintain their original functions	3
	Buildings with the ability to meet current usage conditions	2
<i>External criteria: the group for value-added factors to the buildings</i>		
On-site values	Buildings that were constructed within beautiful precincts with large green areas	4
	Buildings that have well-designed gates and fences	1
Off-site values	Buildings that are located within the heritage building complex or in streets or at street corners with many heritage buildings nearby	2
	Buildings that enjoy wide field of sight and beautiful views	3

Based on the scores a building obtains, buildings can be classified as in:

- Special Value Groups (Group 1, including buildings with special values): Buildings belonging to category A of the criteria group for evaluating the value of the building itself and having total component points of at least 25/30 points.
- Notable Value Group (Group 2, with buildings with remarkable values): Buildings belonging to category the criteria group for evaluating the value of the building itself and having total component points of 15 to 24/30 points.
- Average Value Group (Groups 3, for buildings with average values): Buildings with total component score of less than 15/30 points.

5. Conclusions

Colonial architectural heritage including colonial educational buildings have great values in terms of history, culture, social significance and aesthetics. This valuable part of the heritage has made a substantial contribution to creating a typical cityscape of Hanoi and is also an important proof for the development history of the city. Due to the lack of a comprehensive evaluation, a number of colonial educational buildings had been demolished and damaged because the repairs failed to be in compliance with preservation rules. The precincts have also unexpectedly changed as trees have been cut down for the construction of new buildings and the new parts do not match the existing ones. The renovation of colonial educational buildings to be commensurate with the current use conditions is necessary. However, to preserve and promote the heritage of colonial school architecture in the renovation process, it is advised to assess and rank the heritage works as precisely as possible based on a well-established criteria system. The ranking will help the municipal government develop the fundamental principles for preserving and promoting heritage values in the process of renovating colonial schools with regard to new requirements of use.

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