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Architectural Regionality in the Formation of Regional Identity in Medan City

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ABSTRACT

The development of the times and socio-cultural changes have had a significant impact on architecture, often eroding regional identity and cultural heritage that have been formed over centuries. This is evident in the revitalization of heritage areas, where regional design elements are less integrated, especially in contemporary practices. This study proposes a policy to implement regional architectural design and organize outdoor spaces in cultural heritage revitalization projects. Using architectural design methods, this study aims to create a "right" approach that combines historical monumentalism with contemporary aesthetics. Conceptual strategies such as contextual juxtaposition are used to enhance the design and character of the environment, with a focus on aesthetics and functionality. This approach aims to revitalize underutilized historic buildings by integrating new structures and materials, regenerating a sense of identity and value. This study provides a foundation for cultural and architectural policies in urban development, encompassing physical, economic, and social aspects while encouraging community involvement and ownership.

Keywords: architecture, design, heritage, juxtaposition, regional.

1. Introduction

Rapid development and socio-cultural changes have significantly affected the architectural landscape, often eroding regional identities and cultural heritage that have been formed over centuries. This phenomenon is clearly seen in the revitalization of heritage areas, where public and non-public buildings are designed with a lack of regional elements, both in terms of design and technology. The lack of representation of local identity is mainly due to a limited understanding of culture and architecture, which requires a critical examination of architectural practices.

Heritage buildings are an issue in urban development. On the one hand, the government and heritage experts want to maintain buildings in accordance with the original as stated in cultural heritage laws and government regulations with limited restoration costs. However, on the other hand, owners/entrepreneurs feel that heritage buildings are no longer suitable as places of business and require large funds to restore them to their original state [1]. The existence of traditional houses (Heritage) currently tends to be less noticed by various parties, even though traditional houses are considered to be a cultural heritage of the nation, which is built based on local wisdom and synergy with nature [2].

Regionalism architecture is a movement in architectuvre that advocates the appearance of buildings that are the result of a compound of internationalism (in this case modern architecture) with modern cultural and technological patterns with roots, values and nuances of tradition that are still adhered to by the local

community [3]. Regionalism architecture is an architectural planning approach that takes into account regional characteristics, namely: local architecture, climate, culture and modern technology [4]. Regionalism is defined as an awareness to open up the uniqueness of a region's traditions in responding to place and climate, then giving birth to formal and symbolic identities [5].

This study aims to address these issues by proposing a policy for the application of Regional Architectural Design and outdoor space planning in the context of contemporary development in heritage conservation areas. Using architectural design methodologies applied to heritage environments, this study attempts to determine the "appropriate" architectural attitude to be applied to historical building sites. This approach not only aims to improve the quality of the area but also to create a new identity that reinforces historical monumentalism while integrating contemporary spatial experiences.

This study emphasizes the need for the application of conceptual design, such as contextual juxtaposition, which adopts a contextual approach in design interventions and environmental character. This method is used to measure the aesthetics, beauty, and dynamics of architecture. Conceptual design is very effective when applied to old or historic buildings that are underused, allowing the restoration or creation of new spaces through the addition of new structures, construction techniques, materials, styles, textures, or colors. The introduction of these new elements not only highlights the changes made but also strengthens the presence of the existing building, creating a dialogue between the old and the new. Traditional Toba architecture can be done by bringing out the roof shape of a traditional Batak house [6].

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2. Method

This study uses a qualitative approach in the realm of phenomenology, focusing on descriptive data derived from written or spoken words and observable behavior. This study uses a case study method, which is appropriate for research questions that explore "how" or "why" a phenomenon occurs, especially in contemporary contexts where the researcher has limited control over events. The case study method allows for in-depth exploration of specific cases in real-life contexts, allowing for the development of theories and generalizations based on multiple sources of evidence. Understanding of case studies for architectural research by transforming them into empirical investigations that investigate a phenomenon or setting. Understanding of case studies for architectural research by transforming them into empirical investigations that investigate a phenomenon or setting [9].

This method is accompanied by a case study of the selected object. A case study is an empirical investigation that investigates contemporary phenomena in a real-life context [10]. Data collection was conducted through primary and secondary sources. Secondary data were obtained from relevant literature, books, and research findings, while primary data were obtained through observation of selected buildings. The analysis focused on identifying and analyzing regional architectural characteristics and juxtaposition in heritage buildings, taking into account historical, cultural, and environmental contexts.

Identification is an activity carried out to research or search for, collect, find data by carrying out a recognition process that places objects in a class according to certain characteristics [11]. This study also involved a public perception survey on the application of juxtaposition to heritage buildings. A total of 100 respondents were randomly selected to provide insight into the visual and aesthetic impact of juxtaposition design. This survey aims to measure the level of acceptance and enhancement of heritage value perceived through juxtaposition design.

3. Results and Discussion

This follow-up study will examine the position of Regionalism in the Juxtaposition method, by highlighting

the slow development of architecture in Indonesia compared to Europe. In Europe, radical architecture continues to develop despite criticism, while in Indonesia it is still focused on the search for regional identity. To unify the area, the courtyard area between Maison Caree and Care d'Art has been repaved with granite and limestone [12].

Contextual measurement tools in the context of juxtaposition ranging from contextual to non-contextual [13]. The fact of limited budget for heritage preservation drives the trend of adaptive reuse with contextual Juxtaposition in Europe. In Indonesia, this research will connect the concept of Regionalism and Juxtaposition in the revitalization of heritage buildings to improve the aesthetics of the area. In the landscapes of island Southeast Asia especially, open air sites are hard to identify because environmental conditions and perishable building materials such as wood and bamboo did not allow for the accumulation of cultural deposits, and the formation of mounds which could be explored by means of stratigraphic excavations [14]. Contrast colors are a combination of different colors that complement or fill each other to create color harmony. Strong colors will enhance the impression of the purpose of using the color [15]. Not only physical elements are applied in modern form, but also related to non-physical elements in the form of cultural mindsets, beliefs, layouts that refer to the macrocosmos and others [16].

There are several samples of heritage buildings in the city of Medan that will be used as the next research object, including the heritage area of the Deli Profstation Building - North Sumatra Governor's Office, the heritage area of the Grand Inna Medan Hotel, the heritage area of the former Deli Toba Hospital, the heritage area of the PT KAI Divre Medan Building, the Heritage area of the Warenhuis Building, and the heritage area of the Lake Toba Medan Hotel. All of these research objects will be tried to measure the level of public perception of the Regional revival and Juxtapotition content. Also the results of the contextual comparison of Juxtapotition in Europe (in the initial research), with the Regional Juxtapotition in Medan/Indonesia will be examined for their visual acceptance/aesthetic values. Which values about Regional Juxtapotition will be used as output/recommendations/proposed design guidelines for heritage areas and buildings that are revitalized in Indonesia, especially in the city of Medan.

3.1 Office of the Governor of North Sumatra

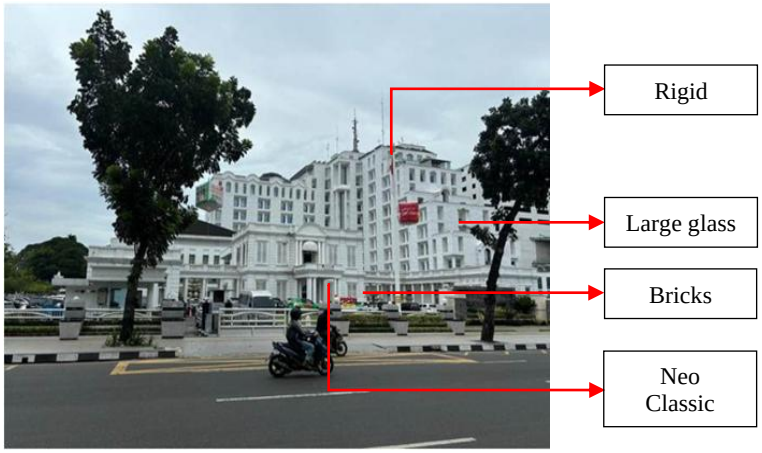

Figure 1. The old and new Governor's Office
Source: https://www.imghippo.com/i/WNOn7056YJ.png

The research location is in the North Sumatra Governor's Office complex, with heritage buildings at the front that are still maintained. This office is located at Jl. Pangeran Diponegoro No. 30, Medan, with a total area of 31,212 m². The existing governor's office is behind the heritage area, with a juxtaposition model to elevate the cultural value of the old building (Figure 1).

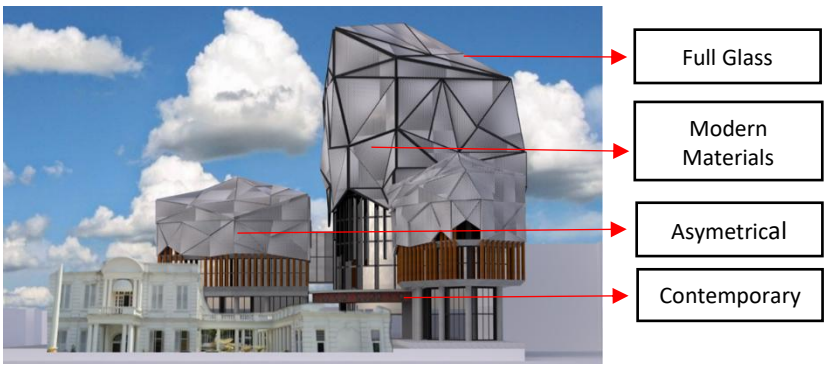

Figure 2. Alternative Engineering Design Modeling Juxtaposition of Heritage Area of North Sumatra Governor's Office Building, Medan
Source: Research Team Experiment, 2024

The new design reinvigorates the Governor's Office Building with additional functions such as a public library for education and recreation. The juxtaposition creates a strong visual identity, distinguishing the new building from its heritage and surroundings (Figure 2).

Table 1. Comparison of Contemporary and Regional Facades Juxtaposition

	Existing Design (Figure 1)	Juxtaposition Design (Figure 2)
Material	Bricks, metal tiles, concrete, large glass	Full glass, wood, modern materials
Design Elements	Symmetrical, rigid	Asymmetrical, more dynamic
Function	Government offices	Government offices + libraries
Aesthetics	Neo-classical colonial	Contemporary, no longer symmetrical

Table Source: researcher analyst

The design comparison reveals that the Regional Alignment approach excels in preserving heritage values while facilitating urban transformation. It effectively highlights the Governor's Office Building without diminishing the significance of the juxtaposed contemporary building (Table 1).

Visual Aesthetic Enhancement

Based on the data obtained, it is assessed that the connection between traditional elements with modern touches in regional juxtaposition design creates a harmony that is quite visually attractive or to one's view. The use of modern materials, regional ornaments, and traditional forms or architecture combined with the latest technology with a contemporary style produces a unique and visually attractive facade. This is in line with research that states that a design approach that combines traditional and modern elements can improve the visual quality of historic buildings.

Strengthening Heritage Identity

In addition to considering the aesthetic aspect, respondents also highlighted the importance of maintaining and promoting heritage identity through architectural design. The regional juxtaposition approach is considered effective in reflecting local cultural values that are expressed in the design, so that the building not only functions as a physical structure, but also becomes a symbol of the cultural heritage of the area to keep it alive where previous studies have revealed that the integration of traditional architectural elements into modern design can strengthen cultural identity while increasing the value of a heritage building.

From the results of the questionnaire that has been conducted, it shows that the community agrees with the application of the Juxtaposition and Regional concepts to current buildings, where in this concept the

community is attracted to the visual aspect and this concept design also has a positive impact on heritage buildings, where the value of the old building can be increased by the design of the new building.

3.2 Former Deli Tobacco Hospital

Figure 3. Former Deli Tobacco Hospital
Source: https://www.imghippo.com/i/VHek5705zJY.png

One of the historical buildings that is an example of an abandoned building in Medan is the Deli Tobacco Hospital located on Jalan Kol. Yos Sudarso. The Tobacco General Hospital was built in 1885 and closed in 2008. Only the side of the Deli Tobacco General Hospital building is now used as a culinary center, but there are several buildings that have a high level of significance that were destroyed to be used as cafes. This not only destroys the building but also eliminates the historical value of the destroyed historical buildings (Figure 3).

In this area, juxtaposition design is carried out, with the hope that this building can create a strong, unique and prominent visual identity that can be a distinctive feature that distinguishes new buildings with new functions from heritage buildings with the hope of strengthening visual branding (Figure 4).

This juxtaposition modern new building aims to revive or reuse the former Deli Tobacco Hospital with various new functions, including for educational facilities, recreation, offices, culinary centers, and so on. In addition, with juxtaposition, this building can create a strong visual identity. The unique and prominent building design can be a distinctive feature that distinguishes the new building from its heritage buildings and from other places around it to strengthen visual branding (Figure 4).

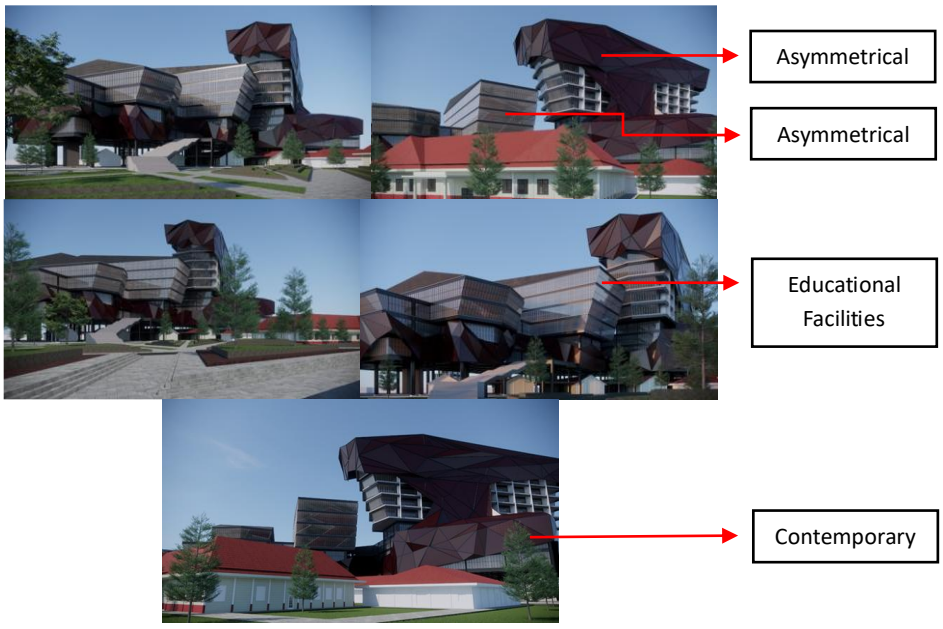

Figure 4. Alternative Design 3D Modeling Juxtaposition of Heritage Area of Former Deli Tobacco Hospital Building
(Source: Research Team Experiment, 2024)

The 3D design results (figure 4) will be tested for perception using a questionnaire for the general public to obtain the level of visual acceptance, harmony and environmental quality. Based on the questionnaire data that has been collected, it was found that the majority of respondents showed a strong preference for the application of regional juxtaposition design on heritage buildings. This approach is considered capable of improving the visual aesthetics of the building while also strengthening the identity of the old building in the building.

Table 2. Comparison of Contemporary and Regional Facades Juxtaposition

	Existing Design (Figure 3)	Juxtaposition Design (Figure 4)
Material	Bricks, concrete, normal glass	Full glass, wood, modern materials
Design Elements	Symmetrical, rigid	Asymmetrical, more dynamic
Function	Hospital	Educational facilities, recreation, offices, culinary centers
Aesthetics	Neo-classical colonial	Contemporary, no longer symmetrical

Table Source: researcher analyst

The design comparison shows that the Regional Alignment approach is more capable of maintaining heritage values while supporting city transformation. This brings the Former Deli Tobacco Hospital into focus without detracting from the value of the contemporary building juxtaposed with it (see Table 2).

Visual Aesthetic Enhancement

Based on the information obtained, it can be concluded that the combination of traditional elements with modern touches in regional juxtaposition design produces an attractive visual harmony. The use of local materials, regional ornaments, and traditional architectural forms combined with contemporary technology and style create a unique and enchanting facade. This finding is in line with the results of research stating that a design approach that integrates traditional and modern elements can increase the visual appeal of historic buildings.

Strengthening Heritage Identity

In addition to the aesthetic aspect, respondents also highlighted the importance of maintaining and promoting the identity of cultural heritage through architectural design. The regional juxtaposition approach is considered an effective method to represent local cultural values, so that buildings not only function as physical structures, but also as symbols of cultural heritage that continue to live. Previous research has shown that the integration of traditional architectural elements in modern design can strengthen cultural identity and add value to historical buildings.

Overall, the results of the questionnaire indicate that the regional juxtaposition design is well received by the community. This approach not only enhances the visual aesthetics of historic buildings, but also strengthens the cultural identity inherent in the building. Therefore, the application of this design can be an effective strategy in the preservation and revitalization of historic buildings, so that local cultural values remain preserved and relevant amidst the development of modern architecture.

3.3 PT KAI Medan Division Building

The building of PT KAI Divre I North Sumatra was originally known as the Deli Spoorweg Maatschappij (DSM) Office Building, which was built in 1918 by architect Ir. Herman Thomas Karsten. This building is located on Jl. Prof. HM Yamin No. 13, East Medan which plays an important role in transportation in the plantation sector in East Sumatra. After the Japanese occupation and Indonesian independence, DSM was nationalized to become part of PT KAI. Until now, this building is still used as an office by maintaining its colonial architecture. The Regional Alignment approach is applied to harmonize old and modern designs, maintaining historical values while adapting to the times (Figure 5).

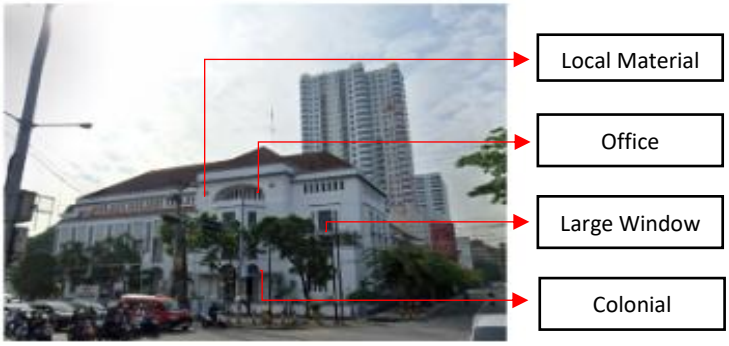

Figure 5. PT KAI Medan Division Building
Source: https://www.imghippo.com/i/WVxI6117KXQ.png

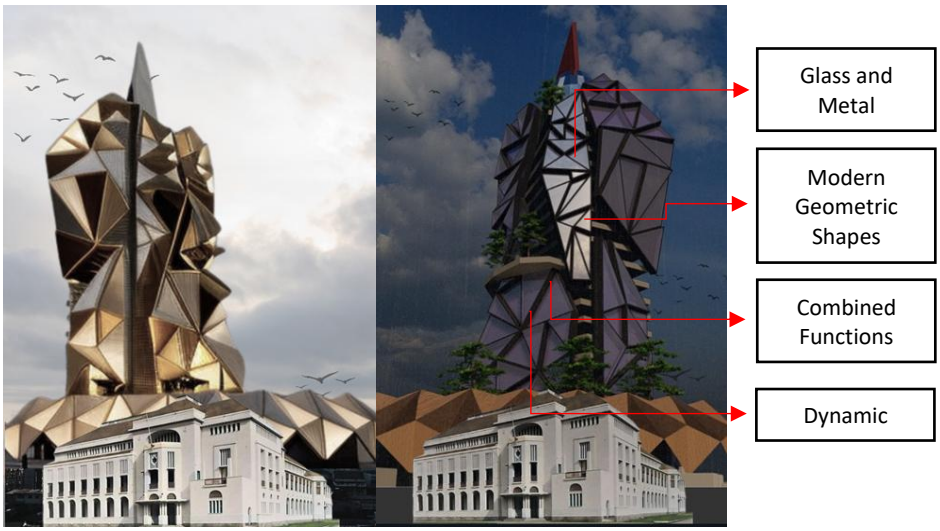

Figure 6. Alternative Design Modeling of Juxtaposition of Heritage Area of KAI DIVRE Medan Building
(Source: Research Team Experiment, 2024)

At Figure 6, is a picture of the results of 3D juxtaposition modeling in the building environment of PT KAI Divre I North Sumatra. The modeling image is right behind the heritage building combined in such a way as to obtain a visual juxtaposition that will be taken by the general public's perception using the questionnaire method.

Table 3. Comparison of Existing Facade and Juxtaposition Design on PT KAI Divre Building Medan

Aspect	Existing Design (Figure 5)	Juxtaposition Design(Figure 6)
Material	Exposed brick, wood and other local materials	Combination of traditional materials with glass and metal
Design Elements	Large windows with optimal ventilation, sloping roof	Addition of traditional North Sumatran ornaments, use of modern geometric shapes
Function	Focus on operational function with a touch of modern aesthetics	Combining operational functions with aesthetics that reflect local and modern identity.
Aesthetics	Colonial style dominance with a few modern modifications	The harmony between traditional and contemporary elements creates the impression of a dynamic building.

Table Source: researcher analyst

The design comparison shows that the Regional Alignment approach is more capable of maintaining heritage values while supporting city transformation. This is in line with PT KAI's vision in developing modern transportation infrastructure that respects history (Table 3).

Visual Aesthetic Enhancement

Based on the data obtained, it is assessed that the integration of traditional elements with modern touches in regional juxtaposition design creates a visually appealing harmony. The use of local materials, regional ornaments, and traditional architectural forms combined with contemporary technology and style produces a unique and attractive facade. This is in line with the findings in the study which stated that a design approach that combines traditional and modern elements can improve the visual quality of historic buildings.

Strengthening Heritage Identity

In addition to the aesthetic aspect, respondents also emphasized the importance of maintaining and promoting heritage identity through architectural design. The regional juxtaposition approach is considered effective in representing local cultural values, so that buildings not only function as physical structures, but also as living symbols of cultural heritage. Previous research has shown that the application of traditional architectural elements in modern design can strengthen cultural identity and provide added value to heritage buildings.

Overall, the questionnaire results indicate that the regional juxtaposition design is well received by the community. This approach not only enhances the visual aesthetics of heritage buildings, but also strengthens the inherent cultural identity. Thus, the application of this design can be an effective strategy in the preservation and revitalization of historical buildings, ensuring that local cultural values remain intact and relevant amidst the development of modern architecture.

3.4 Warenhuis Building

Figure 7. Warenhuis Building
Source: https://www.imghippo.com/i/WVxI6117KXQ.png

Located on Jalan Hindu, Medan City is at the coordinate point 3 ° 35'08 "N 98 ° 40'32" E, It is a trade & service area, with various supporting facilities in it. By having 1 lane and 2 lanes on the main road will facilitate every accessibility in it, the site is a non-contoured land (Figure 7).

The result of several experiments/design engineering of the application of the juxtaposition concept is to create a simple geometric building form or a modern monolith placed in the historical area of Warenhuis. This tries to create a visually interesting contrast and show the difference between the past and the present (Figure 8).

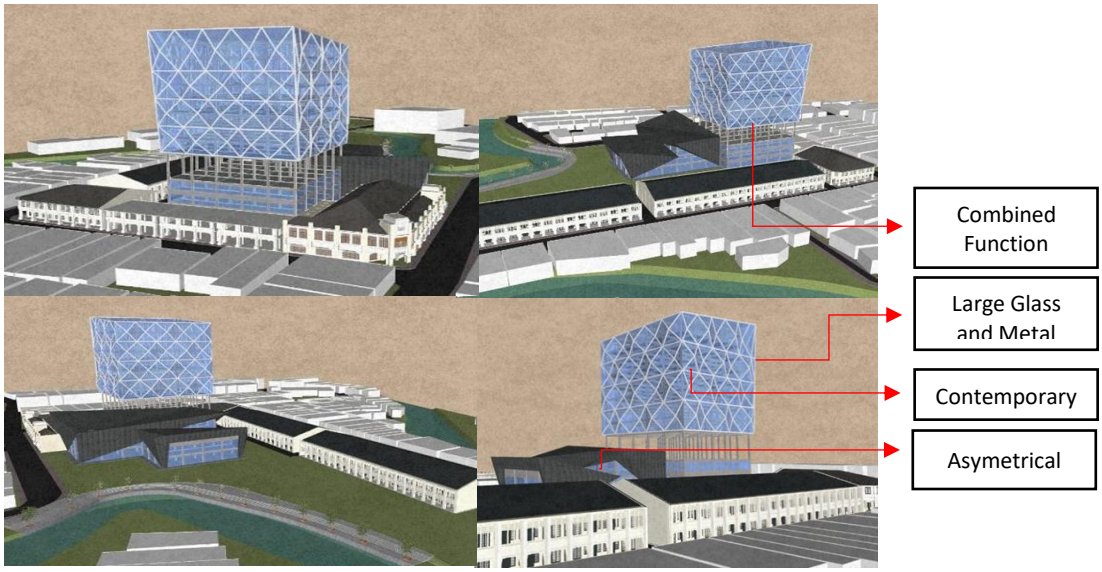

Figure 8. Alternative Results of Juxtaposition Design in the Heritage Warenhuis Area
Source: Research Team Experiment, 2024

Table 4. Comparison of Existing Facade and Juxtaposition Design on the Heritage Warenhuis Area

	Existing Design (Figure 7)	Juxtaposition Design (Figure 8)
Material	Bricks, concrete, normal glass	Full glass, modern materials
Design Elements	Symmetrical, rigid	Asymmetrical, more dynamic
Function	Supermarket	Combined Function
Aesthetics	Neo-classical colonial	Contemporary, no longer symmetrical

Table Source: researcher analyst

Based on the questionnaire data that has been collected, it was found that the majority of respondents showed a strong preference for the application of regional juxtaposition design on heritage buildings. This approach is considered capable of improving the visual aesthetics of the building while also strengthening the identity of the old building in the building (Table 4).

Visual Aesthetic Enhancement

The design approach that integrates traditional elements with modern touches in the concept of regional juxtaposition creates a harmonious and attractive visual blend. The use of transparent, latest materials and traditional architectural forms combined with contemporary technology and style produces a unique and aesthetic building facade. This approach supports the improvement of the visual quality of historic buildings, in line with research showing that the combination of cultural elements and modernity can strengthen the appeal and aesthetic value of a design.

Strengthening Heritage Identity

In addition to considering the aesthetic aspect, respondents also highlighted the importance of maintaining and strengthening cultural identity through architectural design. The regional juxtaposition approach is considered effective in displaying local cultural values, so that buildings are not only physical structures, but also living symbols of cultural heritage. Previous research has shown that integrating traditional elements into modern design can strengthen cultural identity and add value to heritage buildings.

The questionnaire results showed a positive reception of the regional juxtaposition design. In addition to beautifying the visuals of historical buildings, this approach also strengthens local cultural identity. This design can be an effective preservation and revitalization strategy, keeping cultural values relevant in the development of modern architecture.

Table 5. Regional Perception Correlations

			Perception of SC & DT	Perception of KA Office & CP	Perception of Old & New KG	P_BHBRg
Spearman's rho	Perception of SC & DT	Correlation Coefficient	1,000	,186*	,037	,763**
		Sig. (2-tailed)	.	,013	,627	,000
		N	177	177	177	177
	Perception of KA Office & CP	Correlation Coefficient	,186*	1,000	,083	,585**
		Sig. (2-tailed)	,013	.	,273	,000
		N	177	177	177	177
	Perception of Old & New KG	Correlation Coefficient	,037	,083	1,000	,449**
		Sig. (2-tailed)	,627	,273	.	,000
		N	177	177	177	177
	P_BHBRg	Correlation Coefficient	,763**	,585**	,449**	1,000
		Sig. (2-tailed)	,000	,000	,000	.
		N	177	177	177	177

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table Source: researcher analyst

In table 5, it can be seen that the public assessment of heritage buildings and new buildings with the representative juxtaposition method (Old Governor's Office with New Governor's Office) is the least correlated, followed by buildings with contrasting juxtaposition methods (Railway Office with Center Point) which are quite correlated, and buildings with regional juxtaposition methods (Lake Toba Hotel with Standard Chattered Bank) are the most correlated/related. This means that buildings placed with the juxtaposition method with a regional approach are also an option that must be considered to improve the quality of existing buildings and environments.

Table 6. Regional Alignment Correlations

			Compatibility of DT& SC	Compatibility of CP Building & KA	Compatibility of Old & New KG	Regional Harmony
Spearman's rho	Compatibility of DT & SC	Correlation Coefficient	1,000	-,086	-,072	,557**
		Sig. (2-tailed)	.	,256	,339	,000
		N	177	177	177	177
	Compatibility of CP Building & KA	Correlation Coefficient	-,086	1,000	,059	,573**
		Sig. (2-tailed)	,256	.	,432	,000
		N	177	177	177	177
	Compatibility of Old & New KG	Correlation Coefficient	-,072	,059	1,000	,466**
		Sig. (2-tailed)	,339	,432	.	,000
		N	177	177	177	177
	Regional Harmony	Correlation Coefficient	,557**	,573**	,466**	1,000
		Sig. (2-tailed)	,000	,000	,000	.
		N	177	177	177	177

**. Correlation is significant at the 0.01 level (2-tailed).

Table Source: researcher analyst

Next is the harmony between heritage buildings and new buildings in a regional context, which turns out to be quite correlated/related but not too close (Table 6).

Table 7. Adding Regional Value Correlations

			Enhance the quality of existing buildings & environment (All)	Raising heritage values (All)	Juxtaposition Perception
Spearman's rho	Enhance the quality of existing buildings & environment (All)	Correlation Coefficient	1,000	,124	,262**
		Sig. (2-tailed)	.	,099	,000
		N	177	177	177
	Raising heritage values (All)	Correlation Coefficient	,124	1,000	,049
		Sig. (2-tailed)	,099	.	,520
		N	177	177	177
	Juxtaposition Perception	Correlation Coefficient	,262**	,049	1,000
		Sig. (2-tailed)	,000	,520	.
		N	177	177	177

**. Correlation is significant at the 0.01 level (2-tailed).

Table Source: researcher analyst

Table 7 shows that public perception of regional buildings using the juxtaposition method does not add heritage value, but adds to the quality of existing buildings and the environment.

Table 8. Design Perception Correlation

			Perception of KA Office with Design 01	Perception of KA Office with Design 02	Perception of RS Tembakau Deli with Design 01	Perception of RS Tembakau Deli with Design 02	Perception of Old KG with Design 01	Perception of Warenhuis with Design 01	Perception of Warenhuis with Design 02	Perception of Warenhuis with Design 03	Perception of Grand Inna with Design 01	Perception of Grand Inna with Design 02	Median Perception
Spearman's rho	Perception of KA Office with Design 01	Correlation Coefficient	1,000	,462**	,576**	,359**	,478**	,122	,386**	,212**	-,091	-,014	,664**
		Sig. (2-tailed)	.	,000	,000	,000	,000	,105	,000	,005	,233	,856	,000
		N	177	177	177	177	177	177	177	177	175	177	177
	Perception of KA Office with Design 02	Correlation Coefficient	,462**	1,000	,512**	,532**	,375**	,373**	,258**	,293**	,038	,124	,691**
		Sig. (2-tailed)	,000	.	,000	,000	,000	,000	,001	,000	,614	,101	,000
		N	177	177	177	177	177	177	177	177	175	177	177
	Perception of RS Tembakau Deli with Design 01	Correlation Coefficient	,576**	,512**	1,000	,557**	,564**	,154*	,544**	,241**	-,049	-,083	,768**
		Sig. (2-tailed)	,000	,000	.	,000	,000	,041	,000	,001	,520	,271	,000
		N	177	177	177	177	177	177	177	177	175	177	177
	Perception of RS Tembakau Deli with Design 02	Correlation Coefficient	,359**	,532**	,557**	1,000	,397**	,327**	,298**	,321**	,113	,137	,723**
		Sig. (2-tailed)	,000	,000	,000	.	,000	,000	,000	,000	,137	,069	,000
		N	177	177	177	177	177	177	177	177	175	177	177
	Perception of Old KG with Design 01	Correlation Coefficient	,478**	,375**	,564**	,397**	1,000	,093	,571**	,260**	-,063	,078	,706**
		Sig. (2-tailed)	,000	,000	,000	,000	.	,220	,000	,000	,404	,305	,000
		N	177	177	177	177	177	177	177	177	175	177	177
	Perception of Warenhuis with Design 01	Correlation Coefficient	,122	,373**	,154*	,327**	,093	1,000	,171*	,339**	-,004	,184*	,421**
		Sig. (2-tailed)	,105	,000	,041	,000	,220	.	,023	,000	,955	,014	,000
		N	177	177	177	177	177	177	177	177	175	177	177
	Perception of Warenhuis with Design 02	Correlation Coefficient	,386**	,258**	,544**	,298**	,571**	,171*	1,000	,288**	-,011	-,024	,645**
		Sig. (2-tailed)	,000	,001	,000	,000	,000	,023	.	,000	,883	,749	,000
		N	177	177	177	177	177	177	177	177	175	177	177
	Perception of Warenhuis with Design 03	Correlation Coefficient	,212**	,293**	,241**	,321**	,260**	,339**	,288**	1,000	-,048	,109	,467**
		Sig. (2-tailed)	,005	,000	,001	,000	,000	,000	,000	.	,524	,148	,000
		N	177	177	177	177	177	177	177	177	175	177	177
	Perception of Grand Inna with Design 01	Correlation Coefficient	-,091	,038	-,049	,113	-,063	-,004	-,011	-,048	1,000	,223**	,148
		Sig. (2-tailed)	,233	,614	,520	,137	,404	,955	,883	,524	.	,003	,051
		N	175	175	175	175	175	175	175	175	175	175	175
	Perception of Grand Inna with Design 02	Correlation Coefficient	-,014	,124	-,083	,137	,078	,184*	-,024	,109	,223**	1,000	,248**
		Sig. (2-tailed)	,856	,101	,271	,069	,305	,014	,749	,148	,003	.	,001
		N	177	177	177	177	177	177	177	177	175	177	177
	Median Perception	Correlation Coefficient	,664**	,691**	,768**	,723**	,706**	,421**	,645**	,467**	,148	,248**	1,000
		Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	,000	,051	,001	.
		N	177	177	177	177	177	177	177	177	175	177	177

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table Source: researcher analyst

Table 8 shows that based on public perception, the most correlated design alternative is the Deli Tobacco Hospital building with alternative design 02, and the building with the lowest correlation design alternative is the Grand Inna Hotel with alternative design 02.

Table 9. Design Harmony Correlation

			Harmony of Design 01 with KA	Harmony of Design 02 with KA	Harmony of RS Tembakau Deli with Design 01	Harmony of RS Tembakau Deli with Design 02	Harmony of Old KG with Design 01	Harmony of Warenhuis with Design 01	Harmony of Warenhuis with Design 02	Harmony of Warenhuis with Design 03	Harmony of Grandinna with Design 01	Harmony of Grandinna with Design 02	**Design Harmony**
Spearman's rho	Harmony of Design 01 with KA	Correlation Coefficient	1,000	,518**	,418**	,389**	,440**	,195**	,478**	,074	,024	-,043	,609**
		Sig. (2-tailed)	.	,000	,000	,000	,000	,009	,000	,330	,749	,566	,000
		N	177	176	177	176	177	177	176	177	177	177	177
	Harmony of Design 02 with KA	Correlation Coefficient	,518**	1,000	,499**	,512**	,324**	,218**	,301**	,205**	,061	-,019	,636**
		Sig. (2-tailed)	,000	.	,000	,000	,000	,004	,000	,006	,423	,807	,000
		N	176	176	176	175	176	176	175	176	176	176	176
	Harmony of RS Tembakau Deli with Design 01	Correlation Coefficient	,418**	,499**	1,000	,645**	,512**	,160*	,554**	,221**	-,043	-,179*	,692**
		Sig. (2-tailed)	,000	,000	.	,000	,000	,034	,000	,003	,568	,017	,000
		N	177	176	177	176	177	177	176	177	177	177	177
	Harmony of RS Tembakau Deli with Design 02	Correlation Coefficient	,389**	,512**	,645**	1,000	,401**	,400**	,368**	,367**	,143	,029	,771**
		Sig. (2-tailed)	,000	,000	,000	.	,000	,000	,000	,000	,058	,700	,000
		N	176	175	176	176	176	176	175	176	176	176	176
	Harmony of Old KG with Design 01	Correlation Coefficient	,440**	,324**	,512**	,401**	1,000	,170*	,479**	,335**	,014	-,211**	,611**
		Sig. (2-tailed)	,000	,000	,000	,000	.	,023	,000	,000	,850	,005	,000
		N	177	176	177	176	177	177	176	177	177	177	177
	Harmony of Warenhuis with Design 01	Correlation Coefficient	,195**	,218**	,160*	,400**	,170*	1,000	,216**	,359**	,393**	,133	,531**
		Sig. (2-tailed)	,009	,004	,034	,000	,023	.	,004	,000	,000	,077	,000
		N	177	176	177	176	177	177	176	177	177	177	177
	Harmony of Warenhuis with Design 02	Correlation Coefficient	,478**	,301**	,554**	,368**	,479**	,216**	1,000	,287**	,089	-,083	,650**
		Sig. (2-tailed)	,000	,000	,000	,000	,000	,004	.	,000	,241	,274	,000
		N	176	175	176	175	176	176	176	176	176	176	176
	Harmony of Warenhuis with Design 03	Correlation Coefficient	,074	,205**	,221**	,367**	,335**	,359**	,287**	1,000	,236**	-,045	,511**
		Sig. (2-tailed)	,330	,006	,003	,000	,000	,000	,000	.	,002	,550	,000
		N	177	176	177	176	177	177	176	177	177	177	177
	Harmony of Grandinna with Design 01	Correlation Coefficient	,024	,061	-,043	,143	,014	,393**	,089	,236**	1,000	,217**	,354**
		Sig. (2-tailed)	,749	,423	,568	,058	,850	,000	,241	,002	.	,004	,000
		N	177	176	177	176	177	177	176	177	177	177	177
	Harmony of Grandinna with Design 02	Correlation Coefficient	-,043	-,019	-,179*	,029	-,211**	,133	-,083	-,045	,217**	1,000	,119
		Sig. (2-tailed)	,566	,807	,017	,700	,005	,077	,274	,550	,004	.	,115
		N	177	176	177	176	177	177	176	177	177	177	177
	Design Harmony	Correlation Coefficient	,609**	,636**	,692**	,771**	,611**	,531**	,650**	,511**	,354**	,119	1,000
		Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	,000	,000	,115	.
		N	177	176	177	176	177	177	176	177	177	177	177

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table Source: researcher analyst

Table 9 shows the correlation in design harmony between the old building and its alternative design, and the most correlated is the Deli Tobacco Hospital building with alternative design 02, and the least correlated is the Grand Inna Hotel building with alternative design 02.

Table 10. Design Correlation Enhances Heritage Values

			Raising Heritage Value (KAO1)	Raising Heritage Value (KAO2)	Raising Heritage Value RSTD with Design 01	Raising Heritage Value RSTD with Design 02	Raising Heritage Value Old KG with Design 01	Raising Heritage Value Warenhuis with Design 01	Raising Heritage Value Warenhuis with Design 02	Raising Heritage Value Warenhuis with Design 03	Raising Heritage Value Grand Inna with Design 01	Raising Heritage Value Grand Inna with Design 02	**Raising Heritage Value**
Spearman's rho	Raising Heritage Value (KAO1)	Correlation Coefficient	1,000	,613**	,612**	,573**	,490**	,356**	,546**	,331**	,200**	,193**	,733**
		Sig. (2-tailed)	.	,000	,000	,000	,000	,000	,000	,000	,008	,010	,000
		N	177	177	177	176	177	177	177	177	177	177	177
	Raising Heritage Value (KAO2)	Correlation Coefficient	,613**	1,000	,570**	,578**	,541**	,312**	,542**	,374**	,233**	,262**	,730**
		Sig. (2-tailed)	,000	.	,000	,000	,000	,000	,000	,000	,002	,000	,000
		N	177	177	177	176	177	177	177	177	177	177	177
	Raising Heritage Value RSTD with Design 01	Correlation Coefficient	,612**	,570**	1,000	,709**	,567**	,319**	,561**	,353**	,242**	,230**	,808**
		Sig. (2-tailed)	,000	,000	.	,000	,000	,000	,000	,000	,001	,002	,000
		N	177	177	177	176	177	177	177	177	177	177	177
	Raising Heritage Value RSTD with Design 02	Correlation Coefficient	,573**	,578**	,709**	1,000	,426**	,363**	,518**	,367**	,245**	,238**	,736**
		Sig. (2-tailed)	,000	,000	,000	.	,000	,000	,000	,000	,001	,001	,000
		N	176	176	176	176	176	176	176	176	176	176	176
	Raising Heritage Value Old KG with Design 01	Correlation Coefficient	,490**	,541**	,567**	,428**	1,000	,356**	,597**	,412**	,240**	,293**	,735**
		Sig. (2-tailed)	,000	,000	,000	,000	.	,000	,000	,000	,001	,000	,000
		N	177	177	177	176	177	177	177	177	177	177	177
	Raising Heritage Value Warenhuis with Design 01	Correlation Coefficient	,356**	,312**	,319**	,363**	,356**	1,000	,318**	,530**	,036	,326**	,543**
		Sig. (2-tailed)	,000	,000	,000	,000	,000	.	,000	,000	,634	,000	,000
		N	177	177	177	176	177	177	177	177	177	177	177
	Raising Heritage Value Warenhuis with Design 02	Correlation Coefficient	,546**	,542**	,561**	,518**	,597**	,318**	1,000	,401**	,187*	,286**	,709**
		Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	.	,000	,013	,000	,000
		N	177	177	177	176	177	177	177	177	177	177	177
	Raising Heritage Value Warenhuis with Design 03	Correlation Coefficient	,331**	,374**	,353**	,367**	,412**	,530**	,401**	1,000	,031	,395**	,576**
		Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	.	,687	,000	,000
		N	177	177	177	176	177	177	177	177	177	177	177
	Raising Heritage Value Grand Inna with Design 01	Correlation Coefficient	,200**	,233**	,242**	,245**	,240**	,036	,187*	,031	1,000	,184*	,361**
		Sig. (2-tailed)	,008	,002	,001	,001	,001	,634	,013	,687	.	,014	,000
		N	177	177	177	176	177	177	177	177	177	177	177
	Raising Heritage Value Grand Inna with Design 02	Correlation Coefficient	,193**	,262**	,230**	,238**	,293**	,326**	,286**	,395**	,184*	1,000	,480**
		Sig. (2-tailed)	,010	,000	,002	,001	,000	,000	,000	,000	,014	.	,000
		N	177	177	177	176	177	177	177	177	177	177	177
	Raising Heritage Value	Correlation Coefficient	,733**	,730**	,808**	,736**	,735**	,543**	,709**	,576**	,361**	,480**	1,000
		Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	.
		N	177	177	177	176	177	177	177	177	177	177	177

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table Source: researcher analyst

Table 10 shows the correlation between heritage buildings and their alternative designs whether they can raise heritage value. It was found that the most correlated is the Deli Tobacco Hospital building with alternative design 02, and the least correlated is the Grand Inna Hotel building with alternative design 02.

The application of juxtaposition to heritage buildings significantly improves the visual and aesthetic quality of the environment. The majority of respondents (80%) found the juxtaposition design visually appealing, with only 10% expressing negative perceptions. This indicates a high level of acceptance of designs that contrast with traditional heritage architecture.

However, the study also found that public perception changed when respondents were informed about the historical and cultural significance of heritage buildings. The approval rate for façade changes dropped from 80% to 56%, suggesting that awareness of heritage values influences public acceptance of architectural interventions.

The study also highlights the importance of regionalism in juxtaposition design. Buildings that incorporate regional elements, such as traditional motifs and local materials, are more positively received by the public. This suggests that regionalism plays an important role in maintaining cultural identity while adapting to contemporary architectural trends.

4. Conclusion

The study concludes that the application of juxtaposition to heritage buildings can significantly improve the visual and aesthetic quality of the environment while maintaining historical and cultural values. The study recommends that policymakers consider the integration of regional elements in juxtaposition design to ensure that heritage buildings remain relevant in contemporary urban development.

The findings also suggest that public awareness of heritage values influences acceptance of architectural interventions. Therefore, it is important to educate the public about the historical and cultural significance of heritage buildings to foster a sense of ownership and pride.

Overall, the integration of regional architectural principles into contemporary design practices is essential to preserve cultural heritage while meeting modern needs. By advocating contextual juxtaposition and the judicious incorporation of local identities in architectural interventions, this study contributes to the discourse of sustainable urban development and revitalization of heritage sites.

Table 11. Comparison of Change with Perception and Agreement

US Type Facade Changes	Visual	Facade	PV	matter
Dancing House	24%	12%	61%	58%
Royal Ontario Museum	40%	24%	71%	58%
Militaryhistorical Museum	18%	12%	69%	47%
BHD Headquarters	33%	14%	71%	55%
Average	29%	16%	68%	55%

Table Source: researcher analyst

As seen in table 11, the visual facade changes visible to the respondents' eyes were 29% and the level of change to the original overall facade was 16% and considering PUPRRI Regulation No. 19 of 2021 Article 6 Paragraph 1 by making as few changes or adding new elements as possible, the research team proposed that the maximum limit for changes to the overall facade is 15% and visually visible to the general public is 25% (rounded down).

It is expected that the results of this study can be input to the Indonesian government to the regional and city levels to be considered in the revision and amendment of state laws and regulations to the regional and city levels. In addition, the research team also hopes that other researchers will conduct similar studies to sharpen the minimum limit value of facade changes in heritage buildings.

Table 12. Comparison of Change with Perception and Agreement

US Type Facade Changes	Option	Amount
Agree with the designs	Strongly Disagree	3
	Don't agree	12
	Neutral	29
	Agree	71
	Strongly agree	62
Increasing the value of inheritance	Strongly Disagree	3
	Don't agree	14
	Neutral	43
	Agree	59
	Strongly agree	58

Table Source: researcher analyst

The initial conclusion obtained from the research on heritage buildings in the city of Medan, that by using alternative engineering Juxtaposition Architectural design on heritage buildings, it can be concluded that 75.1% agree with using the contrast Juxtaposition method on heritage buildings, with 66.1% saying this method can increase the visual/aesthetic value of their heritage buildings (Table 12).

Table 13. Correlation Agree and Raise Heritage Value

			Agree with the designs	Raising heritage values All	Perception	Design Harmony	Raising heritage values
Spearman's rho	Agree with the designs	Correlation Coefficient	1,000	,642**	,512**	,557**	,233**
		Sig. (2-tailed)	.	,000	,000	,000	,002
		N	177	177	177	177	177
	Raising heritage values All	Correlation Coefficient	,642**	1,000	,375**	,561**	,241**
		Sig. (2-tailed)	,000	.	,000	,000	,001
		N	177	177	177	177	177
	Perception	Correlation Coefficient	,512**	,375**	1,000	,805**	,406**
		Sig. (2-tailed)	,000	,000	.	,000	,000
		N	177	177	177	177	177
	Design Harmony	Correlation Coefficient	,557**	,561**	,805**	1,000	,385**
		Sig. (2-tailed)	,000	,000	,000	.	,000
		N	177	177	177	177	177
	Raising heritage values	Correlation Coefficient	,233**	,241**	,406**	,385**	1,000
		Sig. (2-tailed)	,002	,001	,000	,000	.
		N	177	177	177	177	177

**. Correlation is significant at the 0.01 level (2-tailed).

Table Source: researcher analyst

Further conclusions obtained from the research, that by using alternative design engineering with the Juxtaposition Architecture method for heritage buildings, the results are in agreement with the alternative design revitalization using the contrasting Juxtaposition method for the heritage building area, and can have a good visual perception value for heritage buildings and there is a harmonious correlation/relationship, and alternative designs with the Juxtaposition method can raise the visual/aesthetic value of heritage buildings, although they do not raise the heritage value of the old building (Table 13).

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6. Conflict of Interests

Preservation vs. Design Innovation: (1) Conservationists (government bodies, heritage preservation communities, UNESCO, and historians) prioritize maintaining the historical authenticity and integrity of heritage buildings; (2) Modern architects and developers, on the other hand, often seek to introduce bold, contrasting elements to create artistic tension or enhance the building's functionality; (3) Juxtaposition may be seen as "disruptive" if it contrasts too sharply with the historical context.

Aesthetic Harmony vs. Historical Integrity: (1) Juxtaposition often combines old and new architectural styles in a dramatic way, such as integrating glass and steel structures into classical stone or ornate facades; (2) This raises debates: does the intervention complement or disrupt the original aesthetic value of the building?

Economic Interests vs. Authenticity of Heritage: (1) Property owners and investors may want to enhance economic value by modernizing heritage buildings to attract tourism and commercial activities; (2) However, local communities and scholars might see this as heritage commodification, which dilutes its authenticity and historical significance.

New Functions vs. Original Character: (1) Juxtaposition is often used to repurpose old buildings (e.g., converting a former factory into a contemporary museum with futuristic extensions); (2) However, there is a concern that the new function may overshadow the original identity of the building, reducing it to a mere "shell" for commercial purposes.

Cultural Norms vs. Architectural Experimentation: In many places, heritage buildings carry strong symbolic and spiritual significance for local communities; (2) If juxtaposition is applied too radically, it may be perceived as disrespectful to the site's history and traditions.

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