



## Article

# Analyzing the Role of Identity Elements and Features of Housing in Historical and Modern Architecture in Shaping Architectural Identity: The Case of Herat City

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**Abstract:** Herat has a long and rich history of architecture and culture that has been shaped by many different historical and imperial periods. Since 2002, the city's urban landscape has changed significantly due to a rapid rise in the city's population and modern building processes. This has had a significant impact on the historical image and identity of Herat, as modern architecture has introduced identities that are not in harmony with the city's environment, climate, and culture. This study conducts a comprehensive analysis of architectural identity characteristics to explore the role of traditional and modern architectural elements in forming Herat's architectural identity. This research is based on primary and secondary sources including literature reviews, historical documents, case studies, and interviews with local architects and residents. The results indicate that Herat's architectural identity is shaped by a multitude of factors, including its historical and cultural importance, the utilization of construction materials, the surrounding environmental conditions, architectural guidelines and expertise, political dynamics, and the preferences of both the architect and client. This study provides vital insights for architects, policy makers, and government agencies seeking to promote sustainable and culturally sensitive development in Herat's dynamic architectural landscapes.

**Keywords:** architectural identity; modern architecture; traditional architecture; sustainable; Herat



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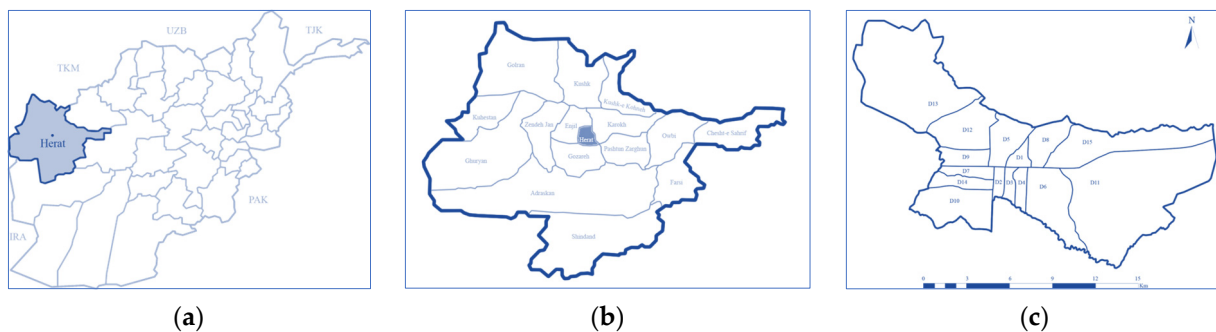
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## 1. Introduction

The city of Herat, located in western Afghanistan, is well known for its cultural heritage and diverse architecture, which represents the city's distinct history and identity. Herat's history dates back to 330 B.C. when Alexander the Great reportedly ordered the construction of an enormous citadel there [1]. The city has maintained its historical boundaries and properties, reflecting the characteristics and functions of Islamic urbanism [2]. From ancient times to the present, Herat has witnessed the development of numerous architectural types and methods. In addition, Herat City is regarded as a model for Islamic towns in Khurasan as well as one of the few remaining historic towns in the Islamic world [2]. Herat's historic city is the best remaining example of the traditional urban form, and it continued to function as a typical Islamic town well into the twentieth century [1,3]. The most noticeable feature of Herat's architecture is its Islamic identity, which flourished during the reigns of the Ghoris, Kerts, and Timurid empires, and the majority of Herat's architectural remains date from this period [4]. One of the most important periods in the history of Herat was the Timurid time, when the city's architecture peaked with Islamic architectural design [5] and the city became a center of Islamic knowledge and culture [6]. The historical city of Herat is particularly valuable in terms of preserving the identity of ancient architecture. As stated in UNESCO reports and studies, the Old City of Herat has

the potential to become a world cultural heritage site because of its historic structures and urban design [7].

The ancient city of Herat faces unprecedented dangers from uncontrolled development, putting its traditional historic fabric at risk. In recent years, there has been a dramatic increase in urban populations, which has affected Herat's traditional image and identity as a result of the modern process of urban expansion and housing. This has occurred through the introduction of foreign building styles, which have no correlation with Herat City's traditional historic architecture. Therefore, the aim of this research is to examine how the historical context and modern architecture have contributed to the distinctive architectural identity of Herat. Figure 1 shows the study area on both a map of Afghanistan map and the map of Herat province, which includes its 15 districts.



**Figure 1.** (a) Location of Herat province. (b) Location of Herat city. (c) Herat city districts map (drawn by authors based on satellite imagery).

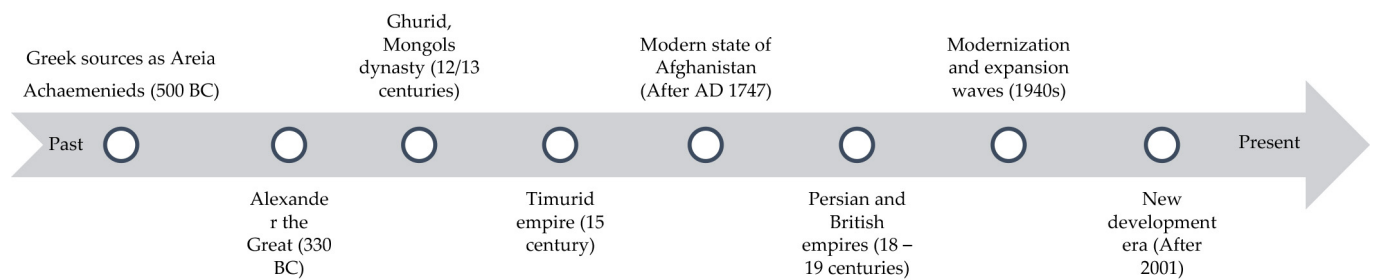
### 1.1. Historical Background

Herat City is the capital of Herat Province in northwest Afghanistan. Herat, known as Areia in Greek sources during the pre-Islamic period, was an important city under the Achaemenid empire and is supposed to have been taken by Alexander the Great in 330 BC [8]. Herat, Afghanistan's third largest city, is known for its cultural heritage and its walled historic city, which was an oasis city on the Silk Road and the capital of the Timurid Dynasty [9]. Herat was a valuable asset to the Umayyad and Abbasid Caliphates until the late ninth century when it became the center of Khurasanian control. Later, it came under the control of the Ghaznavids, Seljuks, Ghorids, Mongols, Kartz, Timurids, and Safavids before becoming a part of Ahmad Shah's modern state of Afghanistan [2]. The congregational mosque of Masjid Jame, the castle of Qala Ikhtyaruddin, and the tomb of Gawharshad are just a few well-known examples of architectural structures from this period. At the turn of the nineteenth century, Herat witnessed considerable change in its historical framework. During the 1940s, the city experienced waves of modernization, which resulted in the construction of roads through the historic district and had an impact on its later development [2,8].

Following World War II, several regimes were established in Afghanistan, and major public works initiatives were initiated with foreign funding. These projects had a huge impact on the urban landscape of various cities, including Herat, where the character of the historical architecture was influenced by this evolution, and there was a possibility that important historic buildings, that had a particular identity in the cities could be lost. The initial master plan for Herat was developed in 1963 and was based on a German plan from the 1930s by Braunschweig Technische Universität, with modifications made by Russian engineers in the late 1950s [2]. The purpose of this master plan was to control unplanned urban growth. When civil battles in Afghanistan's towns, notably Herat, began in 1978, development was halted, and historical architectural monuments were destroyed in certain places. A new phase of urban development started after the fall of the Taliban, and the ancient urban fabric of the Old City of Herat was in danger of being destroyed because of



the increase in population from rural areas and refugees from neighboring nations. Figure 2 shows the historical profile of Herat over time.



**Figure 2.** Historical profile of Herat based on the literature review (illustration by authors).

However, as part of the Herat conservation program, UNESCO committed in April 2005 to protect the city's tangible cultural heritage, and the Aga Khan Trust for Culture (AKTC) began its programs in May of that year [9]. Uncontrolled rapid expansion has harmed the urban identity of traditional buildings in Herat's Old City, and in many places, historic dwellings have been destroyed and replaced by modern ones. However, a city's architectural identity is vital to its citizens, just as a person's identity is important to them. As a result, the loss of a city's architectural identity implies the loss of a country's identity. This study aims to assess the distinguishing features and identity components found in both modern and traditional architectural styles in Herat. The objective is to develop and shape a city's essential architectural identity, which is crucial for future studies and advances in urban development.

### 1.2. Objectives

The purpose of this research is to investigate the formation of Herat's architectural identity, encompassing both historical and modern architectural styles. The study has set out to achieve several objectives, including (1) identifying and evaluating the distinctive components and features of both historical and modern architecture in Herat; (2) assessing the challenges that arise in preserving and promoting the architectural character of Herat in light of the city's rapid urbanization and growth; (3) examining the impact of the fusion of old and new architecture on the cultural history and aspirations of the city, with a focus on the key characteristics of architectural identity; (4) providing recommendations for the future development of Herat's architecture in order to maintain and enhance its architectural identity; and (5) identifying best practices and lessons learned from Herat that are possibly useful for architects, urban planners, and policy makers working in other urban contexts that are experiencing similar rapid changes.

## 2. Identity and Architecture

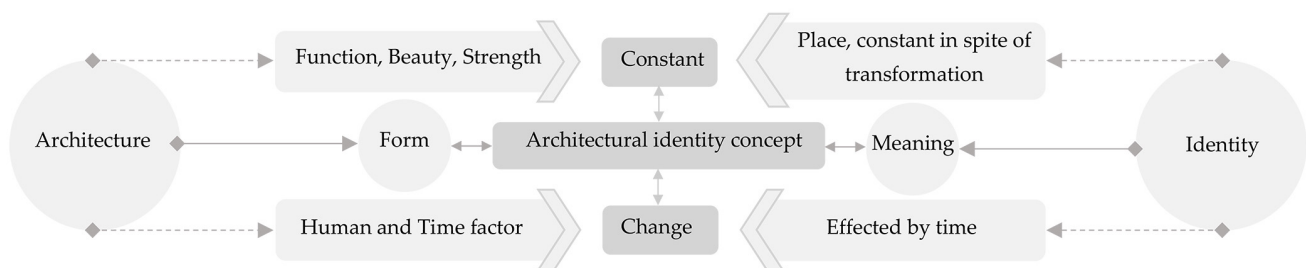
### 2.1. Identity

The term "identity" refers to the unique features or characteristics that define an individual or a collective, and these attributes may encompass social, cultural, historical, personal, or other factors that contribute to an individual's or group's sense of identity or affiliation [10,11]. The process of examining an environmental image entails the recognition of its three fundamental components, namely identity, structure, and meaning; the initial stage in developing a functional image involves the identification of an object, which is referred to as identity [12] (p. 8). In other ways, identity refers to the characteristics, attributes, and qualities that define who or what something is. Identity is intrinsic, natural, progressive, and unavoidable, shaping our past, present, and future [13]. Identity is based on both a person or thing and the culture to which it belongs; it is neither static, nor unchanging, but rather evolves as situations and opinions change; it is not regular and homogeneous but rather consists of numerous components and forms [14] (p. 45). This implies that each city and urban region has distinct identification features. Consequently,

identity is an important consideration in architectural design because it creates a sense of place and builds a connection between people and their built environment.

## 2.2. Architectural Identity

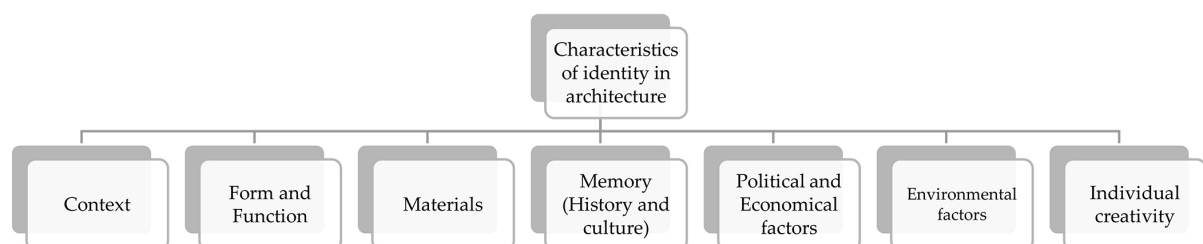
In the context of architecture, “identity” refers to the distinct characteristics and attributes that characterize a specific location or structure [13]. It includes cultural, historical, social, economic, and environmental variables that shape a city’s identity or architectural style [15]. Every community’s architecture contributes to establishing its identity because it conveys the message, idea, and distinctive characteristics associated with the community in which it originated [13,15,16]. This can include elements such as the building’s form, materials, details, façades, history, and cultural references. Figure 3 illustrates the relationship between architecture and identity and demonstrates that time and space are the primary elements that architecture utilizes to shape identity. Time is linked to history and tradition, which have their origins in the past, whereas space is connected with geography and offers physical building blocks that reflect the cultural basis of identity [17]. Architects and urban planners have the unique responsibility to alter and build physical symbols that contribute to a complex set of phenomena that compose the identities of people and communities [18]. Architects’ roles include not simply designing buildings that are functional and efficient but also expressing the beliefs, goals, and identities of the communities they serve.



**Figure 3.** The relationship between architecture and identity, adopted from [17,19].

## 2.3. The Main Characteristics of Identity in Architecture

The relationship between identity and architecture is closely intertwined, with architecture serving as a means of expressing a community’s identity by communicating the unique message and characteristics associated with its place of origin [15,16]. The evolution of architecture throughout history suggests that its identity, like that of humanity, exhibits both constancy and adaptability. Seven factors—the shape and form of buildings, design principles, materials, relationships with context, temporal organization, semantic organization, and spatial organization—can influence the identity of architecture [13]. Time and space are the two main references used to create identity in architecture [19]. Therefore, recent studies have shown that a variety of elements, some of which are discussed below and illustrated in Figure 4, can influence the process of developing an architectural identity.



**Figure 4.** The fundamental components of identity in architecture (illustration by authors).

### 2.3.1. Contextualization

A context is a phrase used to describe the creation of items by combining all events and conditions [20]. Every living thing is part of its environment and interacts with

it [18]. Contextual architecture responds to the environment by considering what already exists [21]. The cultural, social, and geographical settings in which a building is located should be considered in its design [16]. This means that the building should conform to current architectural styles, adapt to its surroundings, and reflect the local culture. The importance and identity of an object and building are tied to their surroundings [22]. For example, relocating one of Herat's historical structures to another city in Afghanistan will almost certainly result in the loss of its original meaning and identity. Emphasizing unity and the visual connection between a building and its surroundings can help generate an architectural identity [13].

### 2.3.2. Form and Function

Form describes the physical appearance of a building, including its size, shape, color, texture, and other visual features [23]. The function of a building, on the other hand, refers to its purpose and practical utilization [24]. It comprises the activities and needs of those living in or using the building. The term "form" pertains to the visual appeal of a building, including its line, outline, shape, and composition; on the other hand, "function" pertains to the fundamental and practical aspects of a building, such as its construction, shelter, program, organization, usage, occupancy, materials, and social purpose [24]. Form and function must be in harmony for an architectural design to be effective. The building form should be influenced by the function, which should be represented in the form of a building [Sullivan, 1947, cited in [23]]. The cultural concepts of a community are reflected in its architectural form, and the incorporation of external elements without cultural adaptation leads to a product that lacks a distinct identity [13]. Similarly, in the urban areas of Afghanistan, particularly in major cities such as Herat, modern constructions represent a significant presence of foreign architectural components. This dynamic has resulted in the development of buildings that lack a clear form, definition, and meaning, and bear no connection to Herat's ancient identity.

### 2.3.3. Building Materials

Building materials, which play a major role in defining a region's identity, are among the most important factors in architectural identity. According to William Morris, the subject of materials is the foundation of architecture [25]. As each building material has distinct properties that allow it to differentiate between an object's softness, hardness, and other physical properties, it is important to recognize the architectural identity of different periods, which represents the culture, architectural style, beliefs, and faith of their time [13,26,27]. Regrettably, in the construction of new buildings in Herat, natural materials compatible with the local climate and natural environment are conspicuously absent. By contrast, manufactured products tend to dominate facades and building materials. This is in contrast to the ancient city of Herat, where natural materials are prevalent in historical architecture. The use of these natural materials has given the city's appearance an original order that is harmonious with the local climate, environment, and mud structures of the historic city.

### 2.3.4. Memory (Historical and Cultural Factors)

Architecture is strongly linked to memory and history. Architectural memory is a physical manifestation of society's cultural memory, and it includes both cultural and architectural monuments, as well as the social norms and customs involved in their preservation and usage [28]. Architecture reflects a community's historical identity and culture [16,29]. Memory performs a crucial role in both the creation and preservation of cultural expressions [29,30]. A building's history and memory can also contribute to its identity. Culture and architecture are both interdependent and interrelated [16]. Ancient buildings can become iconic images and identities of a region or culture. Herat, famous for its historical monuments, has a distinct historical identity; however, due to factors such as war and population growth, the city's historical appearance, which serves as a memorial

identity for thousands of people living in the area, is in danger of being destroyed, and this historical identity is gradually being replaced by an alien identity.

#### 2.3.5. Political and Economic Factors

Political power and architecture have a close relationship [31]. Architecture and politics are inextricably linked, and politics are in charge of building and enhancing the society in which we live [32]. Power and its nature are displayed through architecture [31]. The architectural history of Herat reveals a clear correlation between monumental architecture and political authority, with each historical period showing the impact of political power on the construction of architectural monuments. However, the economy also has significant effects on a region's architectural identity. Architecture is everywhere around us and affects everyone [32], and architectural design decisions can be costly [33]. Furthermore, most people recognize the long-term effects of urban and architectural design as a significant aspect of society's economic, social, and cultural well-being [34]. Thus, economic factors can impact on architectural styles, urban planning, and the expansion of architectural development. The construction of buildings in Herat is completely dependent on economics, with those with higher incomes creating luxurious homes, whereas others with lower incomes build low-quality dwellings, affecting the city's architectural identity.

#### 2.3.6. Sustainability, Technology, and Environmental Factors

Sustainability is defined in the Brundtland World Commission Report (1987) as "the concept of developing in a way that satisfies the current generation's needs while also ensuring that future generations can meet their own needs without any obstacles" [35]. Sustainability is essential for every living creature on Earth [36], and one of the most significant factors in today's advanced technology-based environments is architectural sustainability. One of the key aims that people have established as the ultimate model for all their actions to create a better existence is sustainable and eco-friendly architecture [36]. Environmentally friendly architecture reduces energy consumption, promotes renewable energy sources, decreases waste output, and reduces carbon emissions [37,38]. Green or sustainable construction is the development and use of greener, more resource-conserving methods for construction, restoration, operation, maintenance, and demolition [Roy, 2008 cited in [36]]. Sustainable buildings promote occupant health and well-being by incorporating elements such as acceptable indoor air quality, natural light and views, thermal comfort, and a comfortable layout [37]. These components improve occupant health, productivity, and overall well-being while also giving the building a unique identity.

The current era is regarded as the technological age, with technology serving as the foundation for all human activities in modern civilization. Throughout history, technological development has played a significant role in architectural design, whether it is a new natural or artificial building material; new construction methods or processes; or new concepts, theories, and design principles [39]. Technology is essential to achieving the objectives of sustainable design [40]. Although Afghanistan has a wealth of energy resources and plentiful natural resources, the use of sustainable materials and modern technology in urban construction is still limited owing to a lack of skilled professionals and an insufficient understanding of these disciplines. Unfortunately, it is rare to find sustainable features for homes and other buildings in Herat. Construction procedures generally rely on old techniques that do not meet the demands of the modern day, due to poverty, the effects of conflict, and the shortage of energy sources.

The five guiding principles of environmental architecture are good design, energy efficiency, eco-friendly materials, healthy internal environments, and an environmental form [41]. The environment has a significant impact on architectural solutions, influencing decisions regarding the site, orientation, layout, materials, energy efficiency, and sustainability of a building [38]. Architects consider the environment when designing buildings in harmony with their environment. Unfortunately, in Herat, buildings constructed without the assistance of an architect are incompatible with the local environment and climate.

Building materials used in new construction projects are incompatible with their surroundings and can have long-term negative environmental effects. Consequently, architects aim to design buildings that are both functional and aesthetically appealing while minimizing their negative effects on the environment [38]. Establishing a connection between a building and its environment is recognized as essential for bringing architectural identity to life and can have a major impact on the building's surroundings.

#### 2.3.7. Individual Creativity and Client Preferences

Human creativity is the driving force behind civilization and is essential for every aspect of human advancement [42]. Creativity is frequently defined as the capacity to generate functional and original concepts [43]. Through creativity, architects can incorporate their unique perspectives, ideas, and visions into the design process, resulting in distinctive and innovative projects. On the other hand, client preferences are another crucial factor that significantly influences the identity of architecture. When working on a project, architects collaborate closely with clients to determine their specific requirements, preferences, and building visions [44]. Every decision made by the client and architect has the potential to improve or detract from the building's identity. The building that is the result of the architect and client's collaboration meets the client's needs, while also expressing the architect's creative vision. In fact, the building's creativity integrates not only the architect's creativity, but also the client's invention and ideas. Client preferences are important in Afghanistan's cities, particularly Herat, even if they disregard established laws on and standards of architectural design. These requests are frequently granted, resulting in the incorporation of the client's specific desires into the defining components of the building's identity.

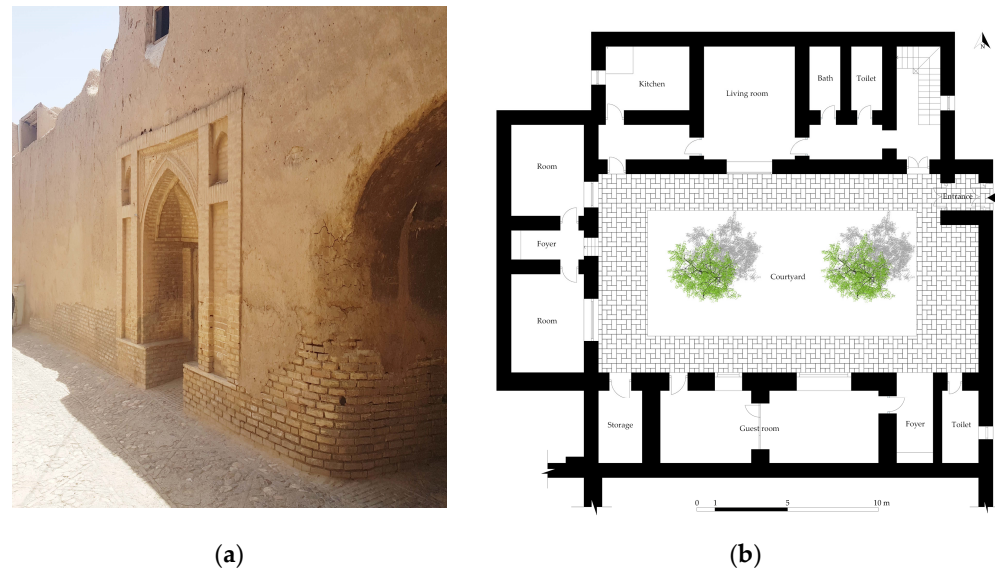
#### 2.4. Traditional Architecture of Herat

Traditional Herati houses typically consist of a series of rooms arranged around a rectangular courtyard. These homes have an inward-looking design, with windows facing the courtyard and blank walls facing the street. *Dalan* (a narrow covered passage) and *Iwan* (an orthogonal three-sided roofed space typically opening to a courtyard) offer secure and covered access to the house. The majority of traditional dwellings in Herat's ancient city are one-and-a-half or two stories. They have thick load-bearing walls, arches, vaults, and domes. The external walls are sun-dried bricks with an inner layer of burned bricks and plasters. The roofs are constructed using masonry, with a focus on curved roof designs, particularly domical vaults. Elaborate woodwork decorates openings, such as windows, doorways, and colonnaded porches. Figure 5 shows the entrance of an old house and a typical floor plan of a traditional house in the historic city of Herat. Traditionally, living spaces are heated via an under-floor duct (*Tabakhana*) connected to a kitchen oven for floor heating. During the summer, living spaces are cooled by a wind-catcher (*Badgir*) system that directs the summer wind into rooms through vertical ducts. The placement of guest rooms in traditional houses ensures the family's protection and privacy by placing them in an indirect approach with no direct access to the interior of the house. The old house features open spaces such as a courtyard and a *Takht-bam*, which is an open area on the second floor with a flat roof (all information about traditional houses in the city of Herat was obtained from [1,2,45–48], while the remaining information was gathered through interviews with local residents).

According to the literature review, it is possible to conclude that the old houses in Herat City had a distinct architectural identity, and that all of the identified characteristics contributed to this architectural identity. In the context of the Old City of Herat, the houses displayed a distinct architectural form (Form), with each room serving a distinct purpose based on the climate and functional needs (Function). The internal and external arrangements and connectivity of the rooms were carefully planned and executed (Form and Function). The extensive use of local materials in the construction of these old dwellings ensured their adaptation to the climate of Herat and its environment (Context and En-



vironment). Notably, wind catchers, as natural ventilation techniques (Sustainability), were used for cooling, whereas Tabakhana systems were used for heating. In addition, the utilization of Takht-bam, Iwan, and courtyards plays an important role in facilitating family gatherings, especially in the afternoon (Culture). The courtyard serves as a private, enclosed gathering space for family members within the residence. It offers a pleasant climate during the summer months and a safe environment for children to engage in play.



**Figure 5.** House in Old City of Herat: (a) old house entrance (photo by authors); (b) old house floor plan (drawn by the authors based on case studies).

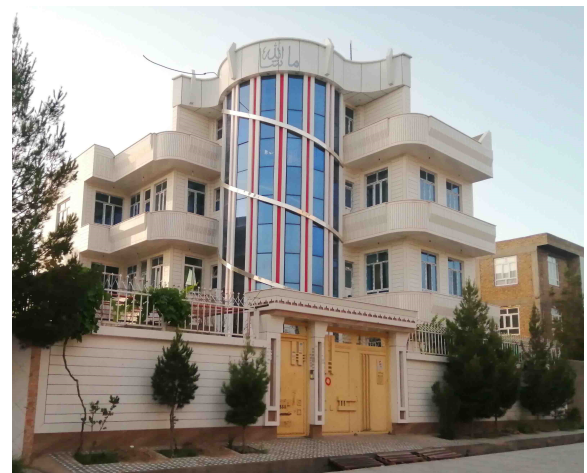
### 2.5. Modern Architecture of Herat

Modern refers to the new in contrast to the old and is used to define a present moment that is perceived as a period with distinctive characteristics that distinguish it from earlier times [49]. Heynen believes that modernity distinguishes the present from the past and guides it into the future. In architecture, “modern” refers to a style that evolved from traditional architectural styles by incorporating new design concepts, materials, and technology to convey the spirit of the modern period [50]. The modernization of Herat began in 1936, when a German engineer created a new master plan. The developments within the boundaries of the master plan appear to have a more regular grid of streets, while the developments outside the boundaries have a more organic network [51]. The new city of Herat was built to the east of the Old City and was designed around a large city park, in front of which are today’s government structures and residential areas [2]. The majority of modern building constructions use concrete, cement, and iron with flat roofs, as opposed to the traditional pyramidal roofs and native materials found in traditional houses [51].

According to evaluations of the literature, the new portion of Herat constructed after the building of the initial master plan featured foreign interventions, resulting in the visible influence of foreign architecture. This influence clashes with Herat’s authentic and historical architecture. After the imposed conflicts ended, this modern housing development project continued, and after 2001, unplanned and informal construction of houses began. Unfortunately, according to Herat’s site inspections, features that may be defined as contributing to and shaped by architectural identity are not visible, particularly in newly constructed districts, as illustrated in Figure 6.



(a)



(b)

**Figure 6.** (a) Modern houses in urban areas of Herat. (b) A typical modern house (photos by authors).

The lack of connections between modern projects and their surroundings is obvious, and forms, façade materials, functions, and incorporation of natural components and materials that harmonize with the surrounding nature are all missing from the buildings. Moreover, a significant gap has arisen within the city between historic and new houses, a concern that has been extensively disregarded in most areas of the city's historical fabric. The yard, which once played an important role in facilitating communication among family members, has now lost its utility, with car parking occupying a sizable section of its territory. Furthermore, children no longer desire to play in the yard, because they are increasingly dependent on technology and spend a significant amount of time using electronic devices.

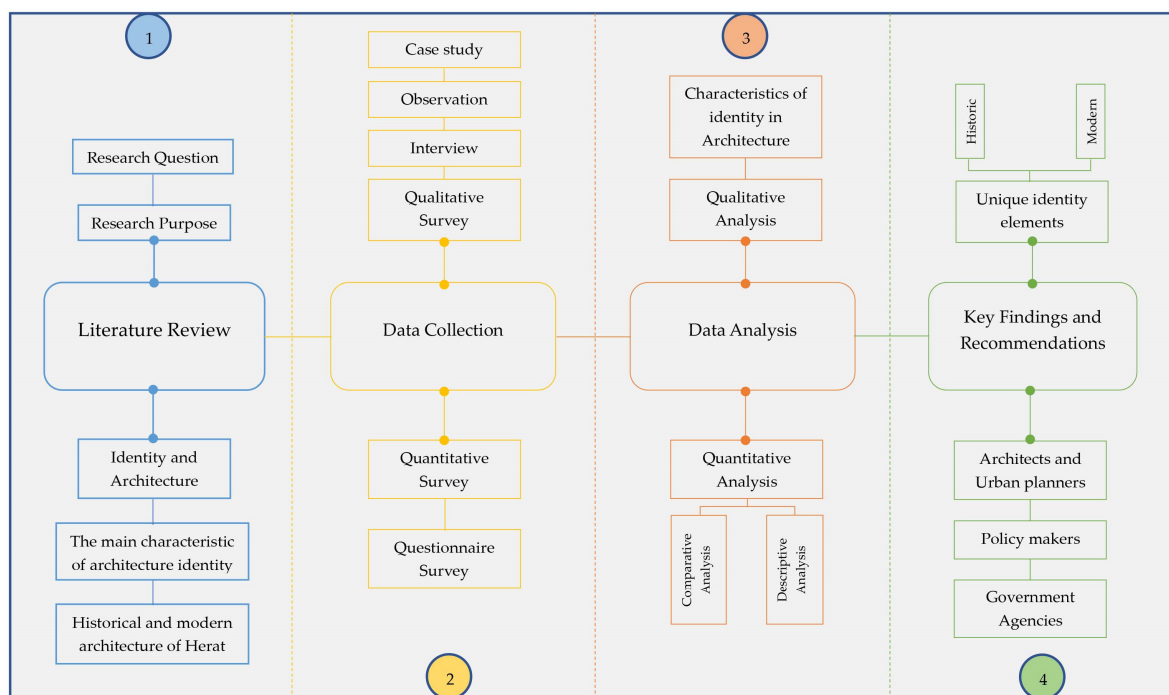
### 3. Materials and Methods

To improve the accuracy of findings, this study used a mixed-methods strategy that combined quantitative and qualitative procedures. Adopting numerous approaches will enhance research findings, provide a more comprehensive explanation of the phenomenon, and enable the exploration of diverse subject areas within the study [52,53]. The following procedures were used to address the study's goals and achieve the research objectives:

1. A detailed review of the existing literature on the architectural history of Herat was conducted, including scholarly articles, books, reports, and pertinent documents referring to the region's architectural styles. This comprehensive review focused on finding relevant theoretical and empirical studies illustrating the impact of both ancient and modern architecture on the establishment of architectural identity. A comprehensive analysis was also conducted to acquire insights into the nature of architectural identity, which revealed the important components that contribute to determining the unique features of architectural identity.
2. To meet the research goal and consider the important components of identity in architecture, this study used both qualitative and quantitative data collection methodologies for data collection. Interviews with local architects and urban planners were one of the tactics used to collect qualitative data on the role of ancient and modern architecture in shaping Herat's architectural identity. In addition, we visited and investigated a number of old and modern buildings in Herat to identify and document their architectural designs, materials, and other architectural components. This was accomplished through a case study of Herat's historical and modern districts, utilizing photographs and field notes. A questionnaire was created for the quantitative study to collect data on residents' impressions of architectural identity. We conducted an online survey and shared it via email and social media platforms to ensure inclusivity and to reduce bias. The online survey has been uploaded

(<https://forms.gle/s3n7Wv4azVGRXinVA>, accessed on 20 March 2023), and aimed to involve female architects in the data-gathering process.

3. This study utilized both qualitative and quantitative analyses to examine the collected data, including literature review findings, site observations, interviews, and case studies. The present qualitative investigation involved a comprehensive review aimed at exploring all factors that contribute to the attributes of architectural identity. Each of these features was examined to gain a deeper understanding of their contribution to establishing architectural identity. This study examined various aspects of architectural identity, encompassing design principles, cultural influences, historical context, spatial organization, materials used, and aesthetic qualities. A greater understanding of the overall architectural characteristics was obtained by examining these features independently and in relation to one another. This study uses descriptive and comparative analysis approaches in quantitative analysis to examine the components that contribute to Herat's architectural identity through the identification of old and modern architecture. The purpose was to identify and study the components that contribute to architectural identity by comparing current and historic architecture.
4. The results of this study provide recommendations for the preservation and promotion of Herat's architectural identity. The recommendations encompass guidelines and directives for professionals in the fields of architecture, urban planning, and governance to integrate the city's lost identity into forthcoming designs. The methodology used in this study is illustrated in Figure 7.



**Figure 7.** Research methodology (illustration by authors).

The current study was conducted in January 2023 in Herat, Afghanistan's third-largest city, which has 15 districts. The objective of this study was to evaluate architectural identity in Herat based on key aspects of identity in architecture. A total of 194 people, drawn at random from Herat University, local architectural companies, and Herat municipality participated in the questionnaire survey, which included both online and in-person participation. We specifically selected 135 responses from those with architectural expertise, including architects, urban planners, students in architecture departments, and professors in the field of architecture. Table 1 shows the profiles and details of the participants.

**Table 1.** Information on the participants (source: authors).

Personal Information	Category	Frequency (n = 135)	(%)
Gender	Male	111	82.2
	Female	24	17.8
Age	18–24	84	62.2
	25–34	42	31.1
	35–44	5	3.7
	45–54	2	1.5
	55 or older	2	1.5
Education level	High school diploma	10	7.4
	Bachelor’s degree	109	80.7
	Masters’ degree	16	11.9
Time lived in Herat	Less than 1 year	13	9.6
	1–5 years	6	4.4
	5–10 years	78	57.8
	More than 10 years	38	28.1
Occupation	Student of architecture	65	48.1
	Architect	49	36.3
	Urban planner	18	13.3
	University professor	3	2.2
Architectural awareness of the participants	Unknown	0	0
	Low	8	5.9
	Moderate	14	10.4
	High	87	64.4
	Very high	26	19.3
Satisfaction of living in the current house from architectural identity point of view	Yes	42	31.1
	No	93	68.9

Women comprise approximately half of Afghanistan’s population. Unfortunately, due to prevailing cultural views, women are expected to assume a key role in domestic activities and carry the majority of household responsibilities. With the Taliban’s return, women have been denied access to all educational opportunities. Nonetheless, we have made efforts to involve female architects from Herat in our survey through online participation so that they can contribute to the identification of characteristics of their city’s architectural identity. As a result, 17.8 percent of participants are female architects and students from the architecture department. The field of architecture is not well recognized among the general public in Herat, and the understanding of architectural disciplines is poor. Therefore, for better results, we attempted to include only participants with proficiency in the field of architecture in this study. Among the respondents, 5.9% had a low level of architectural awareness, 10.4% had a moderate level, 64.4% had a high level, and 19.3% had a higher level.

Various questions, including open-ended, multiple-choice, and brief explanatory questions, were used to collect data for further analysis. The questionnaire was designed in sections, with each component serving a particular purpose. The first segment concentrated on demographic data, while the second section addressed general questions about architectural identity in Herat. Following that, participants were asked to provide additional data about the aspects and features of their dwelling in the context of Herat’s historical and current architecture. Finally, the participants were presented with a final section consisting of questions addressing the fundamental characteristics of architectural identity, specifically context, form and function, materials, memory, political and economic factors, environmental factors, sustainability, and individual creativity. These questions attempted to identify the architectural attributes in Herat by considering the significance of each aspect in the regeneration of architectural identity.

Case studies of ancient and modern housing in Herat’s various urban districts were conducted to supplement the questionnaire findings. These case studies aimed to assess



aspects of architectural identity in Herat's urban areas. Figure 8 shows the location of the Old City and an overview of its current state of development.



**Figure 8.** Location of the Old City and the existing situation of Herat (photos by authors).

#### 4. Findings and Results

The concept of identity in architecture is complicated and nuanced, comprising elements such as the form of the structure, its surroundings, materials used, and its historical significance. To fully comprehend identity in architecture, researchers must properly examine all these variables. Similarly, architects must carefully examine these characteristics when designing buildings that are not just functional, but also culturally meaningful. The findings of this study were based on an examination of identity elements in the historical and present Herat, participant responses, case studies, and interviews with local experts in the subject area. The study conducted using a sample size of 135 participants revealed that a significant proportion of the respondents (45.2%,  $n = 61$ ) decided on a combination of historical and modern architectural styles to define the city's identity.

Moreover, the majority of the participants, specifically 37.8% ( $n = 51$ ), exhibited a preference for historical architecture, whereas a smaller proportion (17.0%) expressed a preference for modern architecture. In terms of the specific features that contribute to Herat's identity, historical buildings, streets, and open spaces received the most responses, demonstrating their importance as the main components. In contrast, it was discovered that modern structures have fewer links with the city's identity. Notably, the survey results revealed that historical buildings were viewed as the foundation of Herat's architectural identity, with 88.9% of the respondents agreeing, while 11.1% stated that modern architecture played a role in creating an architectural identity for Herat. Furthermore, most of the participants ( $n = 118$ , 87.4%) expressed concern about the disappearance of Herat's archi-



tectural character, while 12.6% ( $n = 17$ ) believed that it was progressing. The assessment of architectural identity in Herat is summarized in Table 2.

**Table 2.** General assessment of architectural identity in Herat (source: authors).

Description	Category	Frequency (n = 135)	%
Identity of a city mostly shaped by historical architecture, modern, or a mix of both	Historic	51	37.8
	Modern	23	17.0
	Mix of both	61	45.2
Identity elements in Herat	Historical buildings	83	61.5
	Modern buildings	23	17
	Streets and open spaces	29	21.5
Base of architectural identity in Herat	Historical	120	88.9
	Modern	15	11.1
Architectural identity in Herat is:	Disappearing	118	87.4
	Progressing	17	12.6

To fully comprehend the important parts of Herat's architectural identity, we need to conduct our study while keeping the characteristics of identity in architecture in mind. This entails discussing each aspect separately, defining their significance for identification, and identifying the factors that determine Herat's architectural identity.

#### 4.1. Connection with Surroundings (Context)

All living beings exist within their surroundings, interact with their surroundings, and acquire value and meaning from their interactions with the environment [13,18]. The close relationship between historical structures in Herat and their surroundings was investigated in this study from the perspectives of cultural significance, material usage, and environmental context.

Most participants (93.3%,  $n = 126$ ) concurred with this observation. When asked about the relationship between the current architectural design of Herat and the surrounding environment, 82.2% ( $n = 111$ ) of the respondents stated that there was no connection. In addition, the majority of respondents (76.3%) stated that the relationship between culture and architecture in Herat is still unknown. The connections between buildings, culture, history, and the adjacent environment are of the utmost importance in architectural design.

Any changes to the neighboring environment have a substantial effect on architectural identity. Approximately 79.38% of participants agreed that changes in Herat's urban environment had a direct impact on its architectural identity. Table 3 displays an analysis of the context of Herat's architectural identity. Therefore, during the design process, it is essential to define and consider the interactions between buildings and their surroundings. Harmony between dwellings, their surroundings, and the natural environment is vital in urban settings to avoid feelings of alienation. This inherent relationship should always be naturally established.

**Table 3.** The analysis of context in terms of the architectural identity of Herat (source: authors).

Description	Category	Frequency (n = 135)	%
Historical buildings have a connection with surroundings and culture	Agree	126	93.3
	Disagree	9	6.7
Current architectural style of Herat has a connection with surroundings and culture	Yes	24	17.8
	No	111	82.2
Relationship between culture and architecture in Herat	Unknown	103	76.3
	Known	32	23.7
Change in urban environment has an impact on architectural identity of Herat	Agree	107	79.3
	Disagree	28	20.7

#### 4.2. Housing Form and Function

An acceptable and correct form demonstrates proportion, size, scale, and harmony [Soltani, Gh. 2010, as cited in [13]]. As we travel through a city, the presence of harmonious buildings that display proportionality and transmit a specific concept can instill a lasting architectural identity in our minds. This is accomplished by maintaining proportional relationships between buildings, considering their size and scale, and prioritizing harmony during the design process. Failure to incorporate these critical components in house design might result in visual disorders within the city's identity. Furthermore, functional performance is essential and should be given special consideration in house designs. Each place should have a unique function and meet the demands of its residents. In this study, participants were asked a series of questions about aspects that contribute to a building's good form and function. The data showed that 97.0% (n = 131) of respondents thought that Herat's modern architectural style lacked form unity.

Furthermore, 91.9% (n = 124) agreed that Herat's modern architectural style demonstrated form diversity, but poor architectural design. It is worth noting that certain cities have distinct identities defined by homogeneous house forms, whereas others establish distinctiveness through a variety of housing forms. Furthermore, the majority of participants stressed the importance of architectural regulations and knowledge of the form and function of buildings, which has a direct impact on Herat's architectural identity.

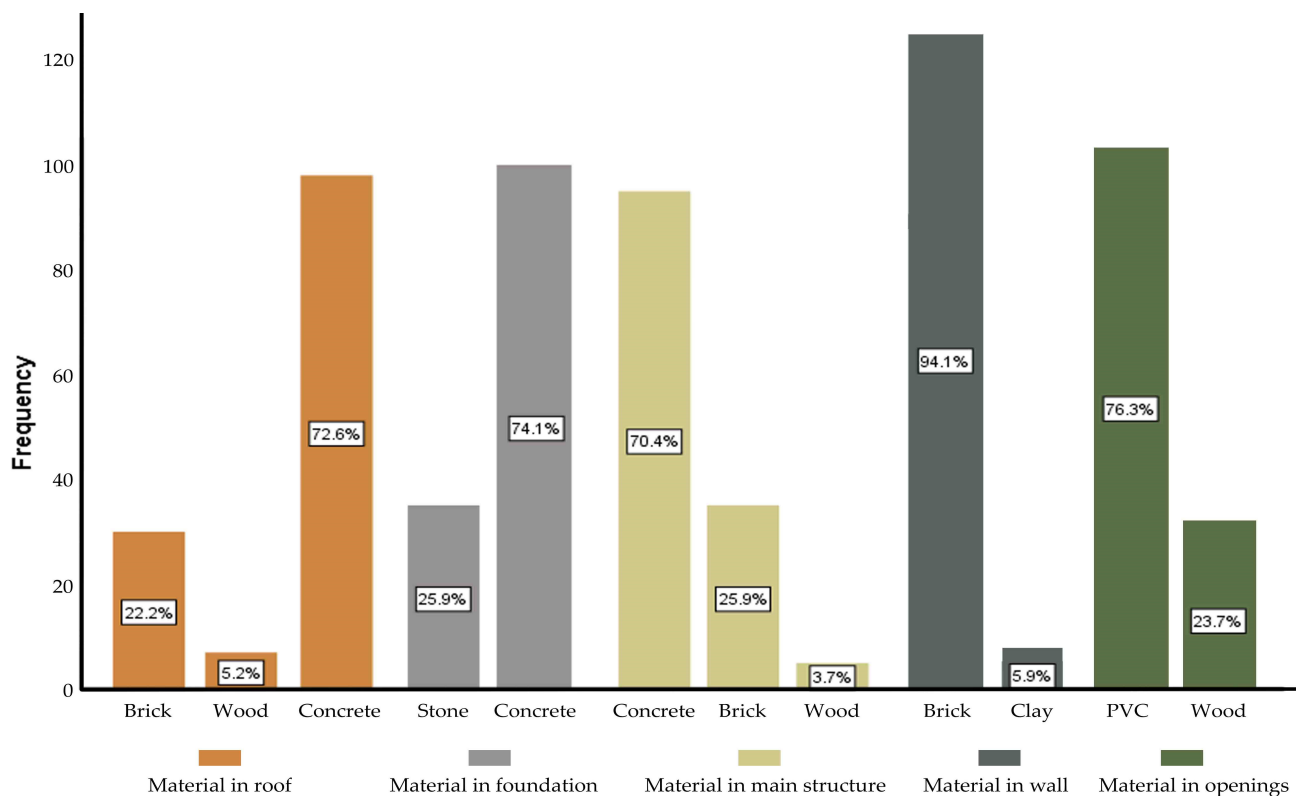
This study also looked at the role of new buildings and modern architecture in terms of cultural sensitivity and the inclusion of historical elements. A vast majority (74.1%, n = 100) agreed that the shape of new buildings and modern dwellings lacked a connection with Herati culture and history, underscoring the importance of these characteristics in determining architectural identity. Furthermore, 84.4% (n = 114) of the polled respondents agreed that foreign components were regularly used in the design of modern residences in Herat. Finally, participants expressed a desire to incorporate historic design features into modern buildings. This is due to the observation that historical characteristics are frequently ignored or neglected when developing modern houses in Herat. In particular, 32.6% (n = 44) agreed strongly, and 41.5% (n = 56) agreed that historical aspects disappeared in the creation of modern dwellings. Table 4 provides an analysis of the form and function parts of the questionnaire.

**Table 4.** The analysis of form and function in terms of the architectural identity of Herat (source: authors).

Description	Category	Frequency (n = 135)	%
Architectural style in Herat has a unity of form	Agree	4	3.0
	Disagree	131	97.0
Herat's current architectural style is diverse in form, with poor architectural design.	Agree	124	91.9
	Disagree	11	8.1
Building form and function are affected by lack of architectural knowledge and regulation in Herat.	Agree	119	88.1
	Disagree	16	11.9
Form of new constructions and modern houses have no relation with Herati culture and history	Agree	100	74.1
	Disagree	35	25.9
Foreign elements are used in most of the modern housing forms in Herat	Agree	114	84.4
	Disagree	21	15.6
Historical elements disappeared in the form of modern houses of Herat	Strongly agree	44	32.6
	Agree	56	41.5
	Neutral	25	18.5
	Disagree	6	4.4
	Strongly disagree	4	3.0

#### 4.3. Building Materials

Materials, which can represent a society's distinctive culture and history, play a significant role in shaping a region's architectural identity over time [13,15,27]. Materials influence the structure, form, aesthetics, cost, construction process, and interior and exterior environments [25]. Thus, the material choice can have a significant impact on a building's overall design and appearance, thereby establishing its identity. As a result, as clothes create an external identity for people and are frequently used to identify them, building materials act as clothing for the structure, providing residents and visitors with a distinct identity. The respondents selected concrete as the foundation, roof, and primary structure of modern dwellings in Herat. The primary material for the openings was polyvinyl chloride (PVC), whereas the major material for walls was fire bricks. According to these findings, the construction materials in Herat's new houses are fully manufactured, whereas all the dwellings in Herat's Old City are made of local and natural resources. Today, we observe how the use of building materials unrelated to a city's climate, environment, culture, or history threatens its architectural identity. Figure 9 shows the construction materials utilized in Herat's modern houses.



**Figure 9.** Types of building materials in modern houses of Herat (graph by authors).

Modern dwellings have given Herat's mud-brown construction an entirely new character by employing manufactured building materials that have no correlation with Herat's history, culture, or surroundings. Glass and Alucobond are two materials that are widely used in the facades and finishing layers of new structures in Herat.

#### 4.4. History and Culture (Memory)

History and culture are important determinants of a nation's identity [29]. Herat has a rich historical identity due to its long historical heritage. As a result, it is essential to keep this important feature in mind when conserving Herat's architectural identity. Regrettably, population increase, conflicts, uncontrolled urban development, and other factors have harmed Herat's historical architectural identity. Despite the efforts of the UNESCO

World Organization and local organizations to preserve Herat's historical monuments, the destruction of historical treasures continues, as people participate in arbitrary acts of demolition. Among the respondents, 91.9% (n = 124) believed that historical preservation and restoration had a positive effect on the architectural identity of Herat. This is significant in light of Herat's long history, which has been marked by numerous social transformations. Participants acknowledged that these social changes had an impact on the identity of their city. Furthermore, 63% (n = 85) of the respondents believed that daily living and social interactions played a role in shaping Herat's identity, whereas 37% (n = 50) disagreed. Among the interviewers, 85.9% (n = 116) rated historical building preservation as very important. Mosques and religious centers were named as the most important features contributing to Herat's architectural identity by an overwhelming 96.3% (n = 130) of respondents. Furthermore, 83% (n = 112) of the participants agreed that history and culture played a positive role in shaping Herat's architectural character. Table 5 shows an examination of the history and culture of Herat's architectural identity.

**Table 5.** The analysis of history and culture in terms of the architectural identity of Herat (source: authors).

Description	Category	Frequency (n = 135)	%
Historical preservation and restoration have a positive impact on Herat's architectural identity	Yes	124	91.9
	No	11	8.1
Social changes have an impact on Herat's architectural identity	Yes	107	79.3
	No	28	20.7
Herat's architectural identity includes social interactions and daily life.	Agree	85	63.0
	Disagree	50	37.0
Preservation of historical buildings in Herat is:	Very important	116	85.9
	Not at all important	19	14.1
Mosques and religious centers are the strongest element of architectural identity in Herat	Yes	130	96.3
	No	5	3.7
Role of history and culture in the architecture identity of Herat	Positive	112	83.0
	Negative	23	17.0

#### 4.5. Politics and Economy

For many years, Afghanistan has suffered from a lack of stability, experiencing multiple revolutions, civil wars, and uncertain power transfers. Politics and administration have been very contentious in Afghanistan for decades, and even after this extended period, the country has yet to see the development of a fully modern state and nation. Politics and economics have played crucial roles in the field of architecture, notably in Afghanistan's major cities, and they have operated on their own terms and regulations when developing an architectural identity.

Today, we observe various examples where politics directly affect design, and the bulk of architectural projects are developed and carried out based on the preferences of politicians rather than an expert and an architect. Herat's politics, on the other hand, are linked to the economy, which is a critical component of the quality of architectural projects. The percentage of income influences a household's ability to afford housing. If a household's income is limited, they build their houses using very low-quality materials, and the majority of modern houses in Herat are built by local contractors who represent themselves as architects, despite the absence of architectural norms. A large majority of participants, around 98.5% (n = 133), recognized the impact of political change on Herat's architectural character.

Furthermore, 74.8% (n = 101) of the respondents thought economic reforms influenced architectural identity. With about 83.7% (n = 113) of participants agreeing, scarcity of

finances and resources emerged as additional elements impacting the architectural design process in Herat, thus affecting overall identity. The active participation of the government and relevant authorities is required to preserve a city's identity. In this survey, 74.8% (n = 101) of the respondents recognized the government's critical role in preserving its identity. Notably, 86.7% (n = 117) stressed the importance of applying architectural standards and legislation to preserve the uniqueness of Herat. Due to the absence of a particular architectural standard that aligns with the surroundings in Afghanistan and its urban areas, the government is faced with challenges. Table 6 summarizes the political and economic analyses of Herat's architectural identity.

**Table 6.** The analysis of politics and economy in terms of the architectural identity of Herat (source: authors).

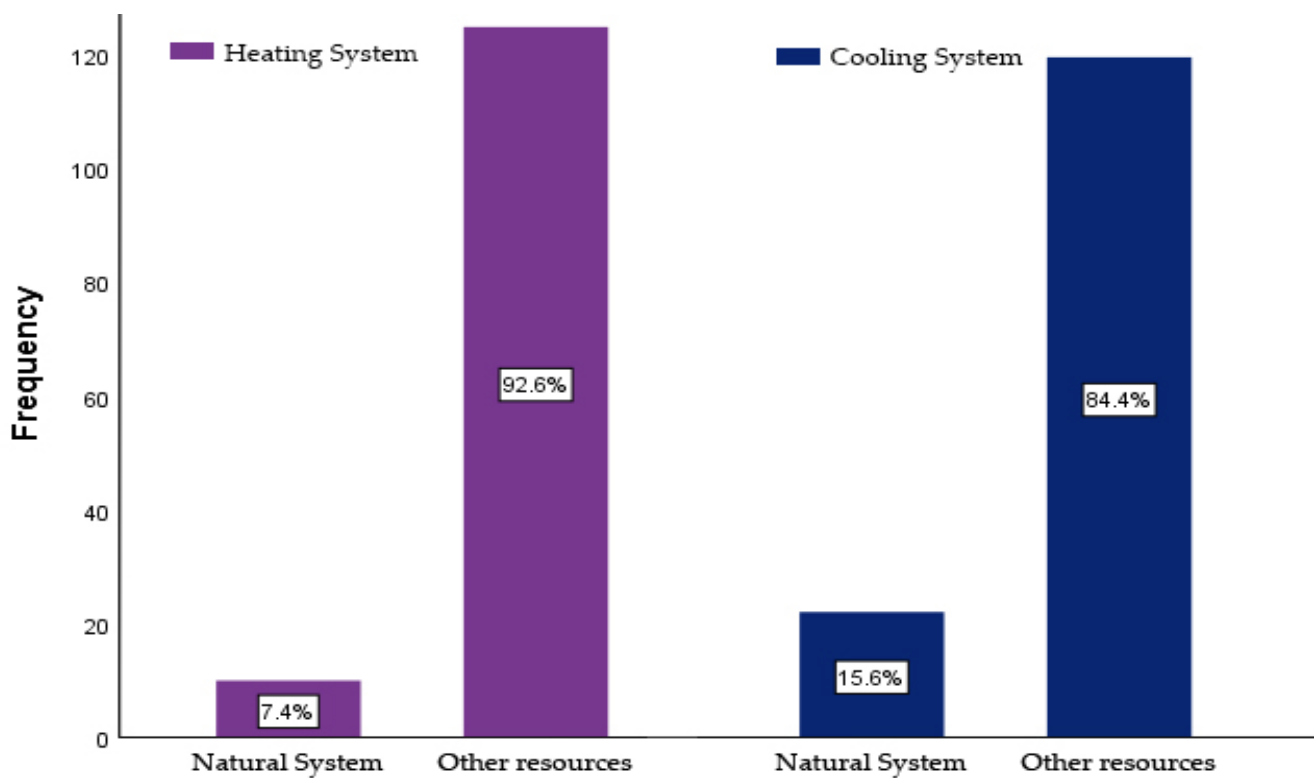
Description	Category	Frequency (n = 135)	%
Political change has an effect on architectural identity of Herat	Yes	133	98.5
	No	2	1.5
Economy has an effect on architectural identity of Herat	Yes	101	74.8
	No	34	25.2
Limited resources and funding have an effect on building design process	Agree	113	83.7
	Disagree	22	16.3
Active role of government in preserving the identity of Herat	Very important	101	74.8
	Not at all important	34	25.2
Architectural legislation can help to promote Herat's architectural identity	Agree	117	86.7
	Disagree	18	13.3

#### 4.6. Environment and Sustainability

The global community is currently witnessing a broad phenomenon of environmental and climate change, which poses substantial difficulties for the entire human population. Architecture, sustainability, and the environment are inextricably linked, and environmental concerns must be addressed in the design and execution of architectural projects. The major goal of an ecologically friendly design is to achieve sustainability by limiting energy consumption and boosting the utilization of renewable energy sources [38]. Figure 10 shows that a significant proportion of people in Herat's newly constructed dwellings rely on alternative resources, such as gas, wood, fuel, and oil for heating and cooling rather than natural systems and resources. During winter and summer, most old houses in Herat used traditional heating (Tabakhana) and cooling systems (Badgir).

Herat's fast expansion has resulted in significant changes to both the natural environment and the cityscape. A substantial majority of respondents (79.3%, n = 107) agreed that changes in the urban environment had an impact on Herat's architectural identity. Furthermore, 96.3% (n = 130) of the participants recognized the potential of green areas and the natural environment for supporting Herat's distinct identity. Regrettably, the reality in Herat, like in other Afghan cities, is that urban planning design remains on paper, with inadequate implementation features. This has resulted in the spread of informal communities within cities. However, 93.3% (n = 126) of the respondents said that the implementation of urban planning had a beneficial impact on Herat's architectural identity. The natural geography of a city is also important in developing its architectural character, as affirmed by 62.2% (n = 84) of the respondents. However, there is a noteworthy scarcity of green spaces, parks, green roofs, and urban landscapes in Herat, and existing ones are insufficient and of poor quality. Furthermore, the residents displayed a considerable level of inactivity and a lack of interest in preserving cleanliness in their surroundings. Approximately 44.4% (n = 60) of the participants said they occasionally actively cleaned their living environment, while 28.9% (n = 39) said they never did.





**Figure 10.** Heating and cooling systems in modern houses of Herat (graph by authors).

Given that Afghanistan is a developing country with a huge population living in poverty, the use of technology in buildings is not prevalent. Despite this, most participants believed that technology has an impact on Herat's architectural characteristics. Afghanistan has an abundance of natural energy resources, which, when combined with technology, can facilitate the adoption of sustainable design concepts in buildings. Table 7 summarizes the findings of the environmental and sustainability analyses.

**Table 7.** Environmental and sustainability analysis of Herat's identity (source: authors)

Description	Category	Frequency (n = 135)	%
Change in urban environment has an impact on architectural identity of Herat	Agree	107	79.3
	Disagree	28	20.7
Green spaces and natural environment create an identity for Herat	Agree	130	96.3
	Disagree	5	3.7
Development and implementation of urban plans have a positive impact on Herat's architectural identity	Agree	126	93.3
	Disagree	9	6.7
Natural geography is the strongest element of architectural identity in Herat	Agree	84	62.2
	Disagree	51	37.8
Participation in cleaning of the living environment	Always	36	26.7
	Sometimes	60	44.4
	Never	39	28.9
Impact of technology on architectural identity of Herat	Low impact	93	68.9
	High impact	42	31.1

#### 4.7. Individual Creativity

Architecture is a creative effort, and every architectural project has a creative architect who uses all the design components in a structure to establish an identity that endures for generations. Architects play an important role in generating symbols of identity for a country, thus integrating the nation and its built environment into a distinct character through the building of inventive structures. Consequently, cities have developed their own individual identities, allowing for recognition and differentiation. In Herat and other cities in Afghanistan, architecture has not yet achieved prominent status and is still relatively unknown to the general public. When constructing their homes, clients frequently rely on local contractors who lack specialized architectural knowledge. As a result of this situation, the city lacks a distinct architectural identity that represents the original Herati architecture, and a sense of disorder affects the urban landscape. A significant majority of participants, nearly 84.4% ( $n = 114$ ), acknowledged that personal experiences and individual choices significantly shaped the architectural identity of Herat. By incorporating the client's preferences and architect's expertise, both clients and architects play crucial roles in the design process of architectural projects.

It is important to note that every decision made jointly by the architect and client contributes to the identity of the final product. Most respondents regarded the preservation and formulation of Herat's architectural identity as crucial, emphasizing the vital function that architects play in this regard. Notably, the survey revealed that the majority of respondents designed their own homes, whereas 16.3% ( $n = 22$ ) utilized the services of architects. In addition, the participants reached a significant consensus regarding the significance of enhancing the quality of architectural education and increasing public awareness of architecture's role in molding Herat's identity. Table 8 shows an analysis of individual creativity in Herat's architectural identity.

**Table 8.** The analysis of individual creativity in terms of the architectural identity of Herat (source: authors).

Description	Category	Frequency ( $n = 135$ )	%
Personal experience and decision influence the architectural identity of Herat	Yes	114	84.4
	No	21	15.6
Role of architects in preserving and shaping architectural identity of Herat	Very important	118	87.4
	Not at all important	17	12.6
Design of the house by owner or by architect	Architect	22	16.3
	Owner	113	83.7
Education quality has a positive impact on Herat's architectural identity	Agree	124	91.9
	Disagree	11	8.1
Architectural identity of Herat can be promoted by raising public awareness about architecture	Agree	123	91.1
	Disagree	12	8.9

#### 4.8. Case Studies

Case studies are extremely important in the field of architecture, providing unique insights into a city's historical and present architectural environments [54]. We conducted case studies on more than 100 households and selected about 20 residences in various districts of Herat. The selection process for these 20 houses tried to include a variety of architectural identification traits presented in various regions of Herat, successfully portraying the many architectural styles common to each area. As a result, our research looked specifically at these houses from the standpoint of architectural identity characteristics. The case study findings and results are described below and shown in Table 9.

**Table 9.** The findings of case studies on houses in the studied areas (source: authors).











Description		Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8	Case 9	Case 10
House type		Courtyard house	Courtyard house	Courtyard house	Courtyard house	Courtyard house	Apartment house	Courtyard house	Apartment house	Courtyard house	Courtyard house
District number		7	7	2	2	7	13	11	1	12	15
Number of floors		1	1	1	1	1	4	3	4	3	3
House area		300 m <sup>2</sup>	100 m <sup>2</sup>	200 m <sup>2</sup>	100 m <sup>2</sup>	300 m <sup>2</sup>	100 m <sup>2</sup>	250 m <sup>2</sup>	300 m <sup>2</sup>	250 m <sup>2</sup>	300 m <sup>2</sup>
Number of residents		5	4	9	5	6	5	5	5	7	8
House image											
Context	Current architectural style	○*	X*	○	X	○	X	○	X	X	X
	Responds to the surroundings	○	○	○	○/X	○	X	○	X	X	X
	Reflects local culture	○	○	○	○	○	X	X	X	X	X
	Connection with surrounding	○	○	○	○	○	X	X	X	X	X
Form and Function	Size, form, shape	○	○/X	○	○/X	○	○/X	○	○	X	○
	Color, texture	○	○	○	○/X	○	○/X	○/X	○/X	○/X	○/X
	Practical usage of the building	○	○	○	○	○	○	○	○	○	○
Materials	Natural materials	○	○	○	○	○	○/X	○	X	X	X
	Manufactured materials	X	X	X	X	X	○	○	○	○	○

Table 9. Cont.

	Description	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8	Case 9	Case 10
Memory	Historical	○	○	○	○	○	X	○	X	X	X
	Cultural	○	○	○	○	○	X	X	X	X	X
Politics and Economy	Government, Authority	X	X	X	X	X	X	X	X	○/X	X
	Political power	X	X	X	X	X	X	○/X	○/X	○/X	○/X
	Income level	○	○	○	X	○	○	○	○	○	X
	Building economy	X	X	X	X	X	X	X	X	X	X
Environment and Sustainability	Climate, Geography	○	○	○	○	○	X	X	X	X	X
	Friendly materials	○	○	○	○	○	X	○	○	X	X
	Natural resources	○	○	○	○	○	X	○	○	○	○
	Natural ventilation	○	○	○	X	○	X	X	X	X	X
	Renewable energy	X	X	X	X	X	X	X	X	X	X
Individual creativity	Personal change	X	○/X	X	○	X	○	○	○	X	○
	Client preference	○	○	○	○	○	○	○	○	○	○
	Role of architect in design	X	X	X	X	X	○	○	X	X	X
	Role of client in design	○	○	○	○	○	○	○	○	○	○
	Ideas and concept of design	X	X	X	X	X	○	○	X	X	X

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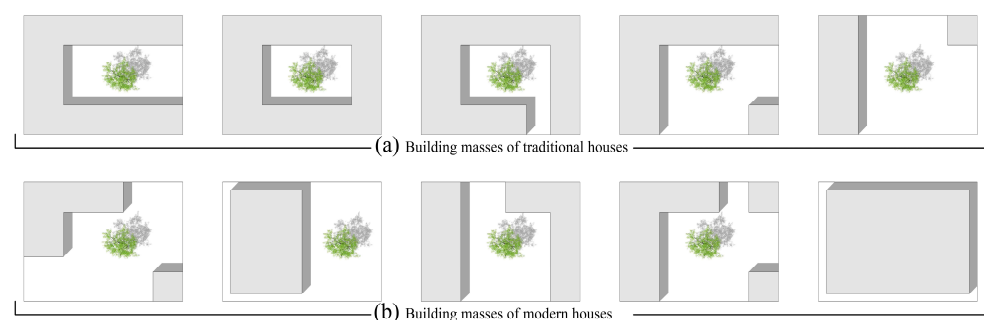


Table 9. Cont.

	Description	Case 11	Case 12	Case 13	Case 14	Case 15	Case 16	Case 17	Case 18	Case 19	Case 20
Memory	Historical	X	X	X	X	X	X	X	X	X	X
	Cultural	X	X	X	X	X	X	X	X	X	X
Politics and Economy	Government, Authority	X	X	X	X	X	X	X	○	X	X
	Political power	○	X	X	X	X	○	X	X	X	X
	Income level	X	○	○	○	X	○	X	○	X	X
	Building economy	X	X	X	X	X	X	X	X	X	X
Environment and Sustainability	Climate, Geography	X	X	X	X	X	X	X	X	X	X
	Friendly materials	X	X	X	X	X	X	X	X	X	X
	Natural resources	X	X	X	X	X	X	X	X	X	X
	Natural ventilation	X	X	X	X	X	X	X	X	X	X
	Renewable energy	X	X	X	X	X	X	X	X	X	X
Individual creativity	Personal change	○	○	○	○	○	○	○	○	○	○
	Client preference	○	○	○	○	○	○	○	○	○	○
	Role of architect in design	X	X	X	X	X	X	X	X	X	X
	Role of client in design	○	○	○/X	○	○	○/X	○	○/X	○	○
	Ideas and concept of design	X	X	X	X	X	X	X	X	X	X

\* ○ Favorable (positive), \* X Unfavorable (negative)

- Cases 1–5 involved traditional houses, primarily in Districts 2 and 7. The older homes in these neighborhoods have distinctive and individual architectural identities that include particular patterns, forms, and representations of the local way of life. These houses stand out for their useful spatial linkages and well-planned space arrangements, which add to their architectural value.
- The utilization of locally derived building materials during the construction of these homes demonstrates their harmonious integration with their surroundings. The widespread use of traditional heating- and cooling systems demonstrates a sustainable approach to indoor environmental comfort. The majority of these homes had a single-story construction with a spacious central yard and rooms efficiently placed around it. Most of these homes were built with the assistance of a mason who worked closely with the owners to ensure that their vision was carried out.
- In general, visiting Herat’s Old City reveals a sense of order in terms of urban form. This identity is derived from the harmony of the dwellings and their seamless connection with the surrounding environment. Recently, for a variety of reasons, residents have randomly replaced ancient houses with new ones that bear no relation to the typical mud structure of the Old City.
- Modern houses lack unity and order, resulting in visual disarray throughout the city. The design of the dwellings primarily adhered to Western culture and ways of life, which may be ascribed to both migration to other nations and the emulation of their lives. The involvement of architects in the construction of modern houses has been drastically reduced, with the majority of houses being built by local contractors who lack a practical understanding of the field of architecture. Access and connection between spaces in modern houses in Herat were in stark contrast to cultural norms, primarily as a result of a decreased sense of privacy.
- In the new sections of the city, development was conducted arbitrarily, with each individual pursuing their own facade, building material, and architectural preferences. This strategy is distinct from the traditional mud architecture that characterizes Herat. Natural ventilation systems have been eliminated from the architectural design of new homes and replaced with systems that rely on electricity, gas, wood, coal, and other similar sources.
- The majority of old residences are built alongside small and irregular roadways, making vehicular movement difficult. Modern dwellings, on the other hand, are erected around large roadways with regular grids and treelined arrangements. Most older homes have built-in building masses at specific locations. However, a lack of precise definitions has been observed in modern houses, with many examples documented throughout case studies. Figure 11 displays two types of building masses: (a) represents the building mass location of traditional houses, while (b) represents the building masses of modern houses based on case studies conducted in Herat’s historical and modern districts.



**Figure 11.** Building mass and plot area: (a) old houses; (b) modern houses (drawn by the authors based on case studies).

#### 4.9. Comparative Analysis

To correctly identify identity elements in old and new architectures and evaluate their strengths and weaknesses, we conducted a comparative analysis of the evaluation factors of architectural identity, concentrating on the distinguishing characteristics that contribute to a building's identity. As demonstrated in Table 10, local identity factors such as privacy, social connections, a sense of belonging, memory, and way of life have not been adequately considered in the modernization of housing. On the other hand, while old houses have distinct identification aspects, they are not strong enough to withstand strong earthquakes. However, the absence of public spaces, such as parks and green areas, is seen in both historical and modern areas. The orientation of the house toward the sun, which was more obvious in older houses, is a feature shared by both old and modern buildings.

**Table 10.** A comparison of Herat's historical and modern architectural identities (source: authors).

Historical Buildings	Evaluation Factors	Modern Buildings
Reflect Herat's traditional architectural context and demonstrate a commitment to the local community and culture	Context	Reflect the variety of architectural styles in Herat and the absence of ties to the community and culture
Characterized typically by compact, interconnected areas, unity in form, and each location serving a practical purpose	Form and Function	Focus on open floor plans, reduced privacy, lack of architectural regulations, use of foreign elements, lack of design unity, use of decorative shapes in façade without any function
Using local products, creating a friendly environment, proper façade colors, and finishing materials	Materials	Manufactured materials, extensive use of glass and Alucobond in the façade
Preserves community's social life and historical and cultural heritage	Memory	Less focus on maintaining history and culture, less social interaction
Community engagement and consultancy, use of local craftsmanship	Politics and Economy	Government authorities and powerful actors disregard architectural regulations, market-based economy
Utilization of natural ventilation and passive cooling- and heating techniques, lack of greenery	Environment and Sustainability	Limited use of renewable energy and low environmental sustainability, low technology base
Client-based idea, local builders, less architectural knowledge	Individual creativity	Design customization, creativity without architectural understanding, and limited public awareness about architecture

The findings in Table 10 show that the comparison between old and new houses in Herat emphasizes the significance of preserving a strong link with the local community, culture, using local materials, creating a friendly environment, and preserving architectural heritage. The old houses exemplify these values through their architectural identity elements, whereas the new houses frequently prioritize modern aesthetics and convenience over these crucial elements. As a result, there is a noticeable disconnect from Herat's abundant architectural traditions and cultural identity. By comparing old and new houses, we can identify strong and weak indicators. This allows us to incorporate the strong indicators into new designs while introducing new policies and solutions to improve the weak indicators.

#### 5. Discussion

Herat is situated on one of the Silk Road's most important routes, which serves not only as a trading route but also as a path for the interchange of ideas and the introduction of various identities. In recent decades, various variables such as conflicts, population migration, the introduction of modernization concepts, informal urban growth, technolog-

ical advancements, the use of novel construction materials, and the influence of foreign lifestyles have greatly influenced Herat's identity and essence.

The impact of architectural regulations and knowledge on the design and functionality of buildings was emphasized, highlighting the significance of having proper guidelines and skills when creating an architectural identity. In building design, functionality is also essential, with each space assigned a specific function to satisfy the needs of the residents. The majority of respondents cited a lack of unity of form and inadequate architectural design in the modern architectural style of Herat.

In addition, the use of foreign elements in contemporary architecture was emphasized, further distancing the architectural style from local culture and history. The preservation of historical buildings and restoration initiatives have a positive effect on Herat's architectural identity. Population growth, conflicts, uncontrolled urban development, and arbitrary acts of demolition have endangered historical architectural identity factors. Participants firmly acknowledged the importance of history, culture, and religious centers in shaping the architectural identity of Herat.

Wars have resulted in the destruction of valuable architectural identities and transformation of the city's image into a soulless and identity-less environment. Politics and the economy have been identified as influencing variables in the establishment of architectural identity in Herat. Economic reforms, resource availability, and finances affect the building design process and Herat's overall identity. This study also highlighted the importance of environmental sustainability in architectural design. However, these initiatives are rare in Herat. In newly constructed homes, the use of alternative resources for heating and ventilation indicates a departure from natural systems and resources.

The lack of architectural significance and specialized knowledge among local contractors contributes to Herat's absence of a recognizable architectural identity. This study emphasizes the significance of personal experiences, individual choices, and quality of architectural education in the formation of architectural identity. Enhancing public understanding of the importance of architecture and promoting the participation of architects in the design process were designated as crucial steps in preserving and shaping Herat's architectural identity.

#### *Identifying Factors and Components*

To examine Herat's architectural identity in relation to traditional and modern residences, as illustrated in Table 11, our research focused on the essential characteristics of architectural identity that contribute to the formulation of Herat's distinctive architectural character. According to the study's findings in Table 11, historical houses in Herat have a greater number of positive attributes that contribute to their architectural identity compared with modern houses.

**Table 11.** Factors and components of architectural identity of Herat (source: authors).

	Historical and Cultural Significance	Material Usage	Environmental Context	Unity and Diversity in Form	Architectural Regulations and Knowledge	Historical Preservation and Restoration	Politics, Wars, and Economy	Technology and Sustainability	Role of Architects and Clients
Historical	+ *	+	+	+	+ / −	+	+	+ / −	+ / −
Modern	− *	+ / −	−	+ / − Diversity with poor architecture design	− Lack of regulations and knowledge	−	− These factors generated new house identities.	−	+ / − Personal housing-development decisions

\* + (Good features); \* − (Unfavorable features)

It is evident that modern houses require the collective attention of homeowners, architects, and government sectors to incorporate elements of architectural identity throughout the design and construction phases. If all the newly constructed houses in Herat incorporate and embrace the elements of architectural identity, the city of Herat will possess a distinct architectural order and establish its own unique architectural identity.

## 6. Recommendations

The research findings reveal that Herat's historical architecture greatly adds to the city's architectural identity when compared with modern architecture. However, Herat's modern architecture lacks numerous aspects that contribute to its architectural identity and require substantial adjustments. To reclaim this lost identity, architects, decision makers, city planners, and homeowners must work together with inhabitants to create a city with a distinct architectural identity. Table 12 provides the proposals and recommendations for promoting Herat's architectural identity.

**Table 12.** Recommendations for promotion of Herat's architectural identity (source: authors).

Architects	Policy Makers	Government Agencies
To develop a relationship with the environment when designing a building, consider the adjacent environment and natural context.	To enhance the design and functionality of buildings, develop architectural regulations and guidelines.	Promote the preservation and restoration of historical buildings.
To enhance cultural value and preserve historical identity, incorporate traditional design elements into modern architecture.	Prioritize architectural expertise over political decisions in architectural initiatives.	Implement urban planning which prioritizes and values architectural identity.
Utilize a range of environmentally friendly construction materials, including local materials, to preserve historical and cultural identity.	Consider the significance of history, culture, and religious institutions when establishing architectural identity.	To assure long-term sustainability, encourage the use of renewable energies for heating and cooling.
Enhance local contractors' architectural education and expertise in order to establish a distinct architectural identity.	Prioritize environmental sustainability and integrate it into policies and regulations.	Increase the public's awareness of architecture's significance and incorporate architects into the design process.
To improve the architectural design in the modern architectural style, promote and define a unity of form and function for modern buildings.	Community participation in the decision making process for architectural designs.	Allocate funds and resources to architectural projects that contribute to the architectural identity of Herat.

The findings in Table 12 indicate that architects have played a minimal role in revitalizing the architectural identity of Herat. In order to revive the identity that has been destroyed, it is crucial to enhance the involvement of architects in the development of new projects. It is also important to remember that the responsibility of revitalizing the architectural identity of the ancient city of Herat lies not only with architects but also with the general public. Together, they should collaborate with architects to support and revive a valuable identity that aligns with the historical and cultural context, as well as the unique conditions and climate of Herat. The government should provide support for the implementation of projects that reflect the architectural identity of Herat city. It is important to collaborate with architects and house owners throughout the process, from construction to post-construction maintenance.

## 7. Conclusions

This study points out the necessity of adopting a comprehensive perspective towards architectural design in Herat, taking into account various factors such as historical, cultural, material, environmental, and social dimensions. The study of elements and features that contribute to architectural identity is of great importance for the future development of

housing in Herat. Studying architectural identity allows us to gain a comprehensive understanding of its significant features in both historical and modern contexts.

The study area for this research included both traditional and modern houses in the city of Herat. The analysis focuses on the main characteristics of architectural identity. A questionnaire was prepared, and interviews were conducted with local architects in order to gather data on residents' impressions of architectural identity. Furthermore, a comprehensive case study has been conducted in the historical and modern districts of Herat. This study used photographs, sketches, and field notes to identify various aspects of housing design, architectural elements, and building materials. To gain a deeper understanding of the features and elements of identity, the collected data were analyzed. This analysis aimed to provide insights into the architectural identity of Herat. The findings provide insight into the connection between the historical structures in Herat and their surrounding environment, specifically in terms of their cultural significance, materials used, and the environmental context.

This paper highlights the significance of various stakeholders such as architects, clients, the government, and architectural educators in influencing and safeguarding the architectural identity of Herat. Several variables and characteristics have been identified in the formation or destruction of Herat's architectural identity. It is essential to prevent the loss of historical identity and the value of Herat's Old City. Instead, the development of new housing should incorporate elements that represent historical identity. According to Thompson (1996), as cited in [19], architecture is an effective means of providing identity for both individuals and cities by representing and reflecting the local communities' lifestyles. To revive historical identity and establish a new identity that harmonizes with the culture, climate, and way of life of the people, it is necessary to comprehend the components of architectural identity. At an initial stage, this comprehension would enable the community to recognize and value its significance.

By integrating conventional design elements, establishing architectural regulations, promoting historical preservation, and implementing sustainable practices, Herat has the potential to preserve its distinctive architectural identity, while fostering cohesive relationships among buildings, culture, history, and the surrounding environment. Being aware of the elements that contribute to the formation of architectural identity is crucial, as is recognizing the factors that can lead to its destruction. Hence, the findings of this study can effectively identify these elements.

Further research is required to comprehensively determine the architectural identity of Herat from multiple perspectives. Our research focused on the overall architectural characteristics of Herat. We encourage fellow academics to conduct more detailed investigations into each individual feature, such as the design of building facades, the choice of construction materials, and the overall design process, particularly within the context of identity for new housing developments in Herat. Future research should also emphasize exploring the role of architects as visionary designers in the development of new housing projects in the city of Herat. The objective of this research is to identify and describe the specific aspects of architectural design that architects can express through the design and construction of new structures, thereby enhancing our understanding of Herat's architectural heritage and its incorporation into modern urban development practices.

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## References

- Samizay, R. Herati housing of Afghanistan. *Ekistics* **1974**, *38*, 247–251.
- Najimi, A.W. *Herat: The Islamic City—A Study in Urban Conservation*; Scandinavian Institute of Asian Studies/Curzon Press: London, UK, 1988.
- Tirard-Collet, O. After the War. The Condition of Historical Buildings and Monuments in Herat, Afghanistan. *Iran* **1998**, *36*, 123. [CrossRef]
- Keshawarz, M.; Kazemi, A.; Khatibi, M.; Crosbie, M. Modern and traditional architectural education in Herat. *ASEE Annu. Conf. Expo. Conf. Proc.* **2009**. [CrossRef]
- Samimi, S.A.B.; Ando, T.; Kawish, K. A Study on Distribution of Houses with Domical Vault Roofs in Herat City—Afghanistan. *J. Archit. Plan.* **2018**, *83*, 2221–2228. [CrossRef]
- Jodido, P. The Aga Khan Historic Cities Programme. In *The Aga Khan Historic Cities Programme: Strategies for Urban Regeneration*; Prestel Publishing: Munich, Germany, 2011; pp. 214–217.
- UNESCO. UNESCO Country Programming Document (UCPD): Afghanistan. 2010–2011. Available online: <http://unesdoc.unesco.org/images/0018/001875/187584e.pdf> (accessed on 25 May 2023).
- Draft, F. *Herat Strategic Development Framework by Sasaki—Issuu*. June 2020. Available online: [https://issuu.com/sasakiassociates/docs/\\_herat\\_strategic\\_development\\_framework\\_full\\_sm](https://issuu.com/sasakiassociates/docs/_herat_strategic_development_framework_full_sm) (accessed on 10 June 2023).
- Samimi, S.A.B.; Ando, T.; Kawish, K. Analysis of the Transformation of Herat Old City, Afghanistan. *Conserv. Manag. Archaeol. Sites* **2019**, *21*, 143–159. [CrossRef]
- Fearon, J.D. What Is Identity (As We Now Use the Word)? Department of Political Science (Stanford University). 1999, pp. 1–43. Available online: <https://www.stanford.edu/group/fearon-research/cgi-bin/wordpress/wp-content/uploads/2013/10/What-is-Identity-as-we-now-use-the-word-.pdf> (accessed on 10 June 2023).
- Parsa, R.M.; Torabi, Z. Explaining the Concept of Identity and Sense of Place in Residential Environment and Lifestyle. *Kuwait Chapter Arab. J. Bus. Manag. Rev.* **2015**, *4*, 27–43. [CrossRef]
- Lynch, K. *The Image of the City*; Technology Press: Cambridge, UK, 1960.
- Torabi, Z.; Brahman, S. Effective factors in shaping the identity of architecture. *Middle East J. Sci. Res.* **2013**, *15*, 106–113.
- Relph, E.C. Place and Placeness. *Mercator* **1976**, *19*, 1–12. [CrossRef]
- Alzahrani, A. Understanding the role of architectural identity in forming contemporary architecture in Saudi Arabia. *Alex. Eng. J.* **2022**, *61*, 11715–11736. [CrossRef]
- Koirala, S. Cultural Context in Architecture. *Int. J. Archit. Plan.* **2021**, *1*, 23. [CrossRef]
- Elessawy, S.; Abulnour, A.; Wissa, W.M. Quantifying the City's Identity a Morphological Analysis of the Historic Rue Rosette. *Int. J. Eng. Res. Technol.* **2018**, *7*, 136–147. [CrossRef]
- Adam, R. *The Role of Architectural Identity in a Globalized World; Understanding, and Design of Built Environments*; Bentham Science Publishers: Sharjah, United Arab Emirates, 2012.
- Samir, H.; Arayici, Y. *The Influence of Modern Architecture in Transforming Iraqi City Identity*. 2015. Available online: [https://www.academia.edu/78930683/The\\_Influence\\_of\\_modern\\_architecture\\_in\\_transforming\\_Iraqi\\_city\\_identity](https://www.academia.edu/78930683/The_Influence_of_modern_architecture_in_transforming_Iraqi_city_identity) (accessed on 10 June 2023).
- Çizgen, G. *Rethinking The Role of Context and Contextualism in Architecture and Design*; Eastern Mediterranean University: Famagusta, Cyprus, 2012.
- Sanghvi, N. Context in Architecture. *Int. J. Emerg. Technol.* **2017**, *8*, 76–79. Available online: [www.researchtrend.net](http://www.researchtrend.net) (accessed on 10 June 2023).
- Yilmaz, M.; Maz, M. Architectural Identity and Local Community. *Ekistics* **2006**, *73*, 140–146. [CrossRef]
- Trisno, R.; Lianto, F. Relationship between Function-Form in The Expression of Architectural Creation. 2019. Available online: [https://advance.sagepub.com/articles/preprint/Relationship\\_Between\\_Function-Form\\_in\\_The\\_Expression\\_of\\_Architectural\\_Creation/8275322](https://advance.sagepub.com/articles/preprint/Relationship_Between_Function-Form_in_The_Expression_of_Architectural_Creation/8275322) (accessed on 10 June 2023).
- Hendrix, J.S. The contradiction between form and function in architecture. In *The Contradiction Between Form and Function in Architecture*; Routledge: London, UK, 2013; Volume 27, pp. 1–219. [CrossRef]

25. Thomas, R. *Materials and construction. Environmental Design: An Introduction for Architects and Engineers*, 3rd ed.; Taylor & Francis: Oxfordshire, UK, 2006; pp. 67–80. [\[CrossRef\]](#)
26. Nelson, L.H. Architectural Character: Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character. Preservation Brief 17: Architectural Character Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character. 1988; pp. 1–17. Available online: <http://www.nps.gov/hps/tps/briefs/brief17.htm> (accessed on 10 June 2023).
27. Soliman, O.A. Perception of building materials in architecture. *J. Eng. Appl. Sci.* **2013**, *60*, 561–583.
28. Remizova, O. Architectural memory and forms of its existence. *J. Archit. Urban.* **2020**, *44*, 97–108. [\[CrossRef\]](#)
29. Gusevskaya, N.; Plotnikova, E. Historical Memory and National Identity. In Proceedings of the 2020 6th International Conference on Social Science and Higher Education (ICSSHE 2020), Xiamen, China, 27–29 November 2020; Atlantis Press: Amsterdam, The Netherlands, 2020; Volume 505, pp. 1026–1030.
30. Peters, P. *Historical Cultural Memory Celebrated through Architecture*; University of Detroit Mercy: Detroit, MI, USA, 2006.
31. Glenn, M. *Architecture Demonstrates Power*. Ph.D. Thesis, Haverford College: Haverford, PA, USA, 2003.
32. Architects, S.A. Architecture and Politics: An architectural policy for Sweden. *Des. Future* **2009**, 1–87. Available online: [https://www.ace-cae.eu/fileadmin/New\\_Upload/6\\_Architecture\\_in\\_Europe/EU\\_Policy/SE-report.pdf](https://www.ace-cae.eu/fileadmin/New_Upload/6_Architecture_in_Europe/EU_Policy/SE-report.pdf) (accessed on 10 June 2023).
33. Wahaj, A.F. Building Economics-Architecture. *J. Hous. Adv. Inter. Des.* **2021**, *4*, 1–4.
34. Hackel, M.; Hackel, A. Architecture, Ecology and Economy: Synergy or Contradiction? *MATEC Web Conf.* **2019**, *280*, 03001. [\[CrossRef\]](#)
35. WCED. *Report of the World Commission on Environment and Development: Our Common Future Acronyms and Note on Terminology Chairman's Foreword*; World Commission on Environment and Development: New York, NY, USA, 1987.
36. Ragheb, A.; El-Shimy, H.; Ragheb, G. Green Architecture: A Concept of Sustainability. *Procedia Soc. Behav. Sci.* **2016**, *216*, 778–787. [\[CrossRef\]](#)
37. Al Shamari, S. Green Architecture & Sustainability. *Archit. Sci. Rev.* **2018**, *35*, 37–38. [\[CrossRef\]](#)
38. Şenyurt, S.U.; Altin, A. Environment-Friendly building design. *Glob. J. Adv. Pure Appl. Sci.* **2014**, *3*, 58–64. Available online: [https://www.academia.edu/42903122/Environment\\_Friendly\\_building\\_design](https://www.academia.edu/42903122/Environment_Friendly_building_design) (accessed on 10 June 2023).
39. Elbony, F. The Effect of Technological Development on Architecture Nanotechnology and Architectural Design. *Fayoum Univ. J. Eng.* **2019**, *2*, 65–77. [\[CrossRef\]](#)
40. Wira, M.; Shafiei, M.; Abadi, H. The Importance of Green Technologies and Energy Efficiency for Environmental Protection. *Int. J. Appl. Environ. Sci.* **2017**, *12*, 937–951. Available online: [https://ripublication.com/ijaes17/ijaesv12n5\\_18.pdf](https://ripublication.com/ijaes17/ijaesv12n5_18.pdf) (accessed on 10 June 2023).
41. Ibrahim, I. Socio environmental impact in eco-architecture. *WIT Trans. Ecol. Environ.* **2010**, *128*, 185–195. [\[CrossRef\]](#)
42. Hakak, A.M.; Bilorio, N.; Venhari, A.A. Creativity in Architecture—A Review on Effective Parameters Correlated with Creativity in Architectural Design. *J. Civ. Eng. Archit.* **2014**, *8*, 1371–1379. [\[CrossRef\]](#)
43. Alomar, M.A. Creativity in Architecture and Management. In Proceedings of the 6th Asian Design Conference, Tsukuba, Japan, 14–17 October 2003; pp. 1–14.
44. Murtagh, N.; Roberts, A.; Hitchings, R. *Architect-Client Interactions Research Project*; The Bartlett School of Construction & Project Management: London, UK, 2016; pp. 1–10.
45. Samizay, R. *Islamic Architecture in Herat: A Study towards Conservation*; Ministry of Information and Culture, Afghanistan: Afghanistan, 1981.
46. Aga Khan Trust for Culture. 2007, pp. 1–37. Available online: <https://www.archnet.org/publications/13093> (accessed on 10 June 2023).
47. Kazimee, B.; Mcquillan, J. Living Traditions of the Afghan Courtyard and Aiwan. *Tradit. Dwell. Settl. Rev.* **2002**, *13*, 23–34.
48. Kawish, K.; Ando, T.; Samimi, S.A.B. A Study of Traditional Houses with Domical Vaults in Herat, Afghanistan. *J. Archit. Plan.* **2017**, *82*, 2741–2750. [\[CrossRef\]](#)
49. Heynen, H. *Architecture and Modernity: A Critique*; MIT Press: Cambridge, MA, USA, 2016.
50. Tobolczyk, M. *Contemporary Architecture the Genesis and Characteristics of Leading Trends*; Cambridge Scholars Publishing: Newcastle upon Tyne, UK, 2021.
51. Samimi, S.A.B.; Maraschin, C. Built heritage and urban spatial configuration: The case of Herat, Afghanistan. *GeoJournal* **2022**, *88*, 2101–2120. [\[CrossRef\]](#)
52. Gorard, S.; Taylor, C. *Combining Methods in Educational and Social Research*; Open University Press: Berkshire, UK, 2004.
53. Denscombe, M. *The Good Research Guide for Small-Scale Social Research Projects*, 3rd ed.; Open University Press: Berkshire, UK, 2007.
54. Nnaemeka, C. Case Study as a Tool for Architectural Research. *Academia.Edu.* 2015, pp. 1–18. Available online: [https://www.academia.edu/33816129/CASE\\_STUDY\\_AS\\_A\\_TOOL\\_FOR\\_ARCHITECTURAL\\_RESEARCH](https://www.academia.edu/33816129/CASE_STUDY_AS_A_TOOL_FOR_ARCHITECTURAL_RESEARCH) (accessed on 10 June 2023).

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