



Between Heritage and Sustainability: The Architectural Legacy of Somers Clarke in Egypt

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ABSTRACT

This study analyzes the architectural legacy of British engineer Somers Clarke (1841-1926) in Egypt, positioning him as a pioneer of "contextual sustainability" long before the concept entered contemporary discourse. Through critical examination of his house at Elkab and the Luxor-Aswan railway stations, the research identifies an evolution in Clarke's thinking through three cumulative phases (field discovery, methodological formulation, and comprehensive application) manifested in four integrated dimensions (environmental, economic, civilizational, and social) that formed a practical response to early twentieth-century challenges. The findings confirm his success in transforming traditional architecture from oral heritage into a sustainable knowledge system, presenting a hybrid model that marries local wisdom with Western methodology. This legacy offers valuable insights for contemporary sustainability projects in the Arab world, remaining a perpetual source of inspiration for creating built environments that harmonize with their ecological and cultural context.

KEYWORDS

Contextual sustainability, Somers Clarke, Architecture in Egypt, Earthen Architecture, Coptic Architecture.

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بين التراث والاستدامة: إرث سومرز كلارك المعماري في مصر

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الملخص

تتناول هذه الدراسة الإرث المعماري للمهندس البريطاني سومرز كلارك (1841-1926) في مصر، موضحةً مكانته كرائد في مجال "الاستدامة السياقية" قبل أن يصبح هذا المفهوم سائداً في الخطاب المعماري المعاصر. ومن خلال الفحص النقدي لمشروعاته الرئيسية؛ منزله في الكاب ومحطات السكك الحديدية بين الأقصر وأسوان، يكشف البحث عن تطور فكر كلارك عبر ثلاث مراحل تراكمية (الاكتشاف الميداني، والصياغة المنهجية، والتطبيق الشامل) تتجلى في أربعة أبعاد متكاملة (بيئي، واقتصادي، وحضاري، واجتماعي) شكّلت معاً استجابة عملية للتحديات العمرانية في أوائل القرن العشرين. تؤكد النتائج نجاح كلارك في تحويل العمارة التقليدية من تراث شفوي إلى نظام معرفي مستدام، مقدّماً نموذجاً هجيناً يزاوج بين الحكمة المحلية والمنهجية الغربية. يقدم هذا الإرث رؤية قيّمة لمشاريع الاستدامة المعاصرة في العالم العربي لمعالجة التحديات الراهنة، كما يظل مصدر إلهام دائم لخلق بيئات مبنية تتناغم مع سياقها البيئي والثقافي.

الكلمات الدالة

الاستدامة السياقية، سومرز كلارك، العمارة في مصر، العمارة الطينية، العمارة القبطية.

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Introduction

The experience of the British architect Somers Clarke (1841-1926) in Egypt represents a complex fabric of cultural interaction and knowledge exchange, surpassing the boundaries of the traditional colonial role to offer a unique model of communication between local architectural heritage and European expertise in architectural preservation. Although nearly a century has passed since his departure, Clarke's contributions remain a relevant subject of study. They are not merely a chapter in Egypt's architectural history. Instead, they form a knowledge framework that continues to inspire contemporary solutions to architectural and environmental crises.

The importance of this study lies in its approach to Clarke's experience through the lens of 'contextual sustainability'—an architectural approach responding directly to local conditions— not as an isolated historical case, but as a model for reviving architectural heritage that can be drawn upon to face the challenges of contemporary architecture.

This paper aims to fill a gap in previous studies, most of which have limited themselves to addressing Clark as an archaeologist or a recorder of Coptic and Islamic architecture, neglecting the foundational design dimension in his thought. While earlier studies focused on his documentation work, this research delves into his sustainable design philosophy and its practical embodiment, revealing his proactive vision of the roots of sustainable architecture in Egypt decades before the term itself emerged.

Research Problem

This study stems from a central problematic: How was a British architect, raised in a conservative Victorian environment, able to present a renewed vision for local architecture in Egypt, surpassing the prevailing orientalist perspective of his era? From this problem, the following questions arise: What methodological foundations did Clarke rely on in studying traditional architecture? How was his philosophy embodied in practical projects? And what are the limits and challenges of this experience within its historical context?

Methodology and Theoretical Framework

The research adopts an integrative analytical methodology, combining documentary study of primary and secondary sources, architectural analysis of existing projects, and a critical reading of the historical context. It is based on a theoretical framework centered on the concept of "practical sustainability" as a key to understanding Clarke's experience, which transcended abstract theorizing to practical application, considering traditional architecture as an integrated system that has proven successful over thousands of years.

Historical and Problematic Context

With the transformation of Egypt's landscape at the beginning of the twentieth century due to major projects such as the Aswan Dam, the need arose for a more balanced architectural model. Clarke's concept of "practical sustainability" emerged as a critical response to two simultaneous realities: on one hand, the deterioration of traditional

architecture under the burden of imported materials unsuitable for the climate; and on the other hand, the extravagance in construction projects consuming expensive imported resources. In this context, Clarke's sustainability was not an intellectual luxury but a practical necessity born out of the environmental and economic challenges of his era.

Study Objectives

The research aims to achieve three main objectives: first, to analyze the documentation methodology Clarke followed in studying traditional building techniques; second, to examine the embodiment of this methodology in his architectural projects; and third, to evaluate his intellectual and architectural legacy and the extent of his contribution to developing local awareness of the importance of architectural heritage.

Study Limits and Challenges

The research faces a major challenge in the scarcity of direct primary sources, necessitating reliance on secondary sources with critical verification. The scope of the study is limited to examining existing projects and published works, without delving into undocumented personal or relational aspects.

1. Historical and Intellectual Background of Somers Clarke (1841–1926)

The British architect and scholar Somers Clarke (1841–1926) (Figure 1) was a seminal figure in the architectural discourse and conservation practice of early twentieth-century Egypt during the late 19th and early 20th centuries. Although his fame primarily arose from his studies on Coptic and Islamic architecture, his contributions were not confined to documentation or academia; they also extended to practical architectural practice and experimentation in an environment fundamentally different from the European context in which he was raised.



Figure 1: Portrait of architect Somers Clarke, after Nicholas Warner, Somers Clarke, a pioneer of mud brick architecture in Egypt. In: Serge Santelli, p. 2.

1.1 Origin and Academic Formation

Somers Clarke (1841-1926) received his architectural training in England during the Victorian era, where he apprenticed at the office of Sir George Gilbert Scott, a specialist in Gothic architecture¹. This background qualified him to hold the position of architectural surveyor for St. Paul's Cathedral in London (1897-1906),² an experience that laid the foundation for his scholarly approach to the study of historical architecture.

Clarke was influenced by the European heritage preservation movement led by William Morris, which formed the intellectual framework he brought to Egypt and applied in studying local architecture and traditional building techniques.

1.2 Arrival in Egypt and Engagement in the Architectural Scene

Clarke arrived in Egypt in the late nineteenth century, during a period when the country had entered a new phase following the British occupation in 1882. Clarke did not come merely as an individual architect but as part of a broader system that included British experts, engineers, and officials seeking to impose a new model of administration and heritage preservation³.

He became involved in archaeological excavations in Elkab area (Hierakonpolis) in 1893, where he directly observed local building techniques and began documenting them⁴.

His Nile journey from Aswan to Khartoum in the winter of 1909-1910 was distinguished by a precise recording of traditional buildings in the unexplored Nubian regions⁵, which expanded his understanding of the diversity of local architecture and its adaptation to the environment. Clarke was no longer just an external observer but became a researcher deeply engaged with the Egyptian architectural reality, convinced of the value of local built heritage and the importance of its preservation.

1.3 Clarke's Role in the Development of the Arab Antiquities Preservation Committee and His Stance on Restoration

1.3.1 Joining the Committee and the Foundational Vision

Clarke joined the Arab Committee for the Preservation of Antiquities (Figure 2), the body responsible for overseeing the maintenance of Islamic and Coptic buildings. Through this position, he had direct access to a large number of archaeological buildings in Cairo and Upper Egypt, and he was also able to contribute to drafting official reports on their condition. These reports were not merely descriptive but included practical recommendations regarding methods of restoration and reuse.

¹ Micklethwaite, J. T., and S. Clarke. "On the Structure and History of English Churches" *Archaeological Journal* 39 (1882): 1-25.

² Colvin, H. M. *A Biographical Dictionary of British Architects, 1600-1840* (New Haven: Yale University Press, 1995), 229.

³ Reid, D. M. *Cairo University and the Making of Modern Egypt* (Cambridge: Cambridge University Press, 1990), 134.

⁴ Petrie, W. M. F. *Hierakonpolis I* (London: Quaritch, 1900), v-vi.

⁵ Clarke, S. "Notes on Churches and Other Antiquities in Nubia" *Proceedings of the Society of Antiquaries of London* 23 (1910): 45-60.



Figure 2: A page from the minutes of Arab Antiquities Preservation Committee sessions for the year 1903, showing the name Somers Clarke listed among the honorary members of the committee. Archive of Arab Antiquities Preservation Committee.

Murqus Simaika (later founder of the Coptic Museum) recorded Clarke's role in preserving Coptic antiquities, saying: "When Somers Clarke visited Egypt in the winter following our first meeting in Oxford in the autumn of 1890, I took him to visit all the old churches in Cairo. He said he, like me, was shocked by the poor way certain parts of the buildings had been restored and demolished. He wrote a letter to The Times newspaper blaming Lord Cromer for the poor state of these antiquities. In the spring of 1891, Lord Cromer asked me to take him to these churches, and he was amazed by the beauty of the interiors, and then asked me: What do you suggest? I told him to put all these antiquities under the supervision of the Arab Antiquities Preservation Committee, similar to the old mosques, and to add one or two Copts to the committee members. He said he agreed with the idea and later implemented this proposal"⁶.

1.3.2 Prominent Preservation Issues and Campaigns

Apart from his decisive intervention in the future of Coptic antiquities in Egypt, Clarke made many other contributions to the committee. He had a clear viewpoint regarding the preservation of historical monuments, which can be observed in a letter where he expressed his displeasure over the relocation of the secondary ablution fountain in the courtyard of Sultan Hassan School (Figure 3) to the Mardini Mosque, saying: "As a member of the committee, I would have very much liked to convince them to keep the fountain in its place. I should have done so, as the mosque has a worldwide reputation. Many artists have submitted studies and drawings of the fountain, and they will find it removed and may ask: Why? This question seems to me the most difficult to answer. I fear that we will now receive some unpleasant criticism that could have been avoided only if we had adhered to the very simple rule of preserving and respecting historical monuments, which is to strictly maintain what we found without irreplaceable changes. This will certainly ensure the respect of archaeologists from all over the world"⁷.

⁶Simaika, M. *Ancient Coptic Churches of Egypt*, vol. 1 (Cairo: Société Archéologique Copte, 1932), 45–46.

⁷Clarke, S. *Letter to the Comité de Conservation des Monuments de l'Art Arabe*, 1904, quoted in K. A. C. Creswell, *The Muslim Architecture of Egypt*, vol. 1 (Oxford: Clarendon Press, 1952), 155.



Figure 3: Drawing of the fountain of Sultan Hassan Mosque, which was later transferred to the Al-Tanbgha Al-Mardani Mosque.

https://commons.wikimedia.org/wiki/File:Mosque_of_Sultan_Hassan,_Cairo-David_Roberts.jpg.

Somers had a good relationship with Max Herz Pasha, and during the period 1902-1914, Clarke often lent him his house (Al-Dhahabiya) to enable him to study the monuments under his responsibility⁸. He also played a pivotal role in 1906 in securing government credit of four thousand Egyptian pounds for the restoration of the Red and White Monasteries in Sohag, which are among the most important Christian monuments in Egypt. Clarke became a lifelong friend of Herz, even after the latter was expelled from Egypt in 1914 as an undesirable foreign national following the outbreak of World War I.

Somers Clarke resigned from the Committee for the Preservation of Arab Antiquities on April 16, 1923, thereby announcing a clear principled stance. His resignation came after the departure of the committee's chief architect and his replacement by another, which led him to refuse working under new supervision.

In his resignation letter, he emphasized his fundamental view distinguishing between "preservation" and "restoration," considering restoration to lead to "forgery and destruction"⁹. His adherence to these principles was evident throughout his career, as he remained one of the foremost defenders of preserving antiquities. This is clearly reflected in his influential reports sent to the Society of Antiquaries in London¹⁰, which sometimes resulted in international decisions on the issues he raised.

However, sometimes his interventions came too late to prevent destruction. In 1894, during the initial planning of the Aswan Dam, Clarke was the first to draw attention to the enormous danger posed by this dam to the Philae Temple and other Nubian temples, warning: "It may be wrong to assume that the flooding of Nubia is a trivial

⁸Volait, M. *Architectes et architectures de l'Égypte moderne (1830–1950): Genèse et essor d'une expertise locale* (Paris: Maisonneuve & Larose, 1989), 178.

⁹Clarke, S. *Letter to Ahmed Ali Bey (resignation)*, April 16, 1923. Comité de Conservation des Monuments de l'Art Arabe Archives, Cairo.

¹⁰Clarke, S. "Report Presented to the Society on the Preservation of Egyptian Antiquities." *Proceedings of the Society of Antiquaries of London*, 2nd series, vol. 20 (London: Society of Antiquaries, 1905), 67–69.

matter¹¹." In 1896, he pointed out the severity of the damage inflicted on the Babylon Fortress in southern Cairo.

In 1902, Somers Clarke noted in one of his important reports a highly significant incident in the history of Islamic architecture in the city of Aswan: the deliberate vandalism of a mausoleum known as the "Maqam of the Seventy-Seven Saints," a building with a Sufi religious character dating back to the Fatimid era¹². This mausoleum stood atop the hill opposite the famous "Cataract" hotel and formed part of the city's urban and religious landscape before being demolished as part of the project to construct the first Aswan Dam in 1901¹³ (Figure 4).

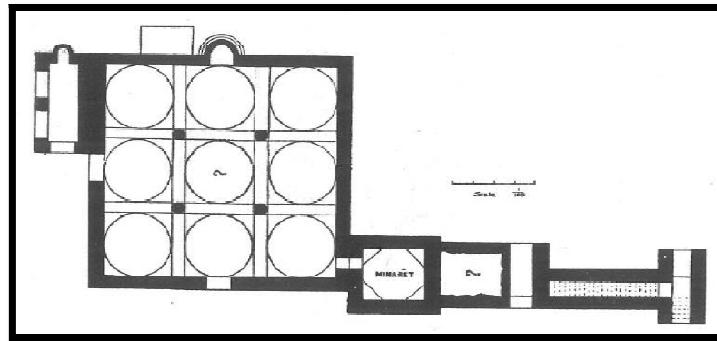


Figure 4: Plan of the mausoleum of the Seventy-Seven Awliya (saints) in Aswan, after K. A. C. Creswell, *Early Muslim Architecture in Egypt, Vol. I: Ikhshidid, Fatimid and Ayyubid Styles, A.D. 939–1171*, Oxford: Clarendon Press, 1952, p. 155.

The mausoleum represents a rare witness to Islamic funerary architecture in Upper Egypt during the Fatimid era, indicating the spread of this architectural style beyond the main urban centers¹⁴. However, the strategic project of building the Aswan Dam led to the sacrifice of this monument, highlighting the paradox between modernization projects and heritage preservation.

The incident of removing the "Seventy-seven Saints" mausoleum in Aswan illustrates the stark contradiction between the demands of modernization and the necessities of heritage preservation at the beginning of the twentieth century. During the construction of the Aswan Dam, this rare Fatimid monument was sacrificed in the context of the state's - under British influence - efforts to develop infrastructure, with a clear neglect of the architectural and historical value of the building.

Were it not for the meticulous documentation provided by Somers Clarke, who condemned the deliberate removal, this monument would have been completely lost¹⁵. His records preserved a textual existence of the mausoleum after its physical

¹¹Clarke, S. "Report on the Possible Effects of the Aswan Dam on Philae," *The Times* (London), March 3, 1894.

¹²Clarke, S. *Christian Antiquities in the Nile Valley: A Contribution towards the Study of the Ancient Churches* (Oxford: Clarendon Press, 1912), 112.

¹³Sheehan, P. *The British and the Egyptian Antiquities Service, 1882–1925* (London: Egypt Exploration Society, 2014), 140–142.

¹⁴Behrens-Abouseif, D. *Cairo of the Mamluks: A History of the Architecture and Its Culture* (London: I.B. Tauris, 2007), 33..

¹⁵Reid, D. M. *Whose Pharaohs? Archaeology, Museums, and Egyptian National Identity from Napoleon to World War I* (Berkeley: University of California Press, 2002), 214.

disappearance, becoming a primary source relied upon by later researchers such as Creswell¹⁶. Thus, this incident became a cited example in architectural studies, a stark illustration of how modernization projects can lead to irreparable heritage loss when lacking clear protection policies.

Moreover, in 1913, when the idea was proposed to move the statue of Ramses I from Memphis to Cairo Station Square, Clarke questioned whether it was appropriate to place the statue in a quiet location to highlight its beauty and allow careful study, warning against its distortion amid tram lines and electric poles¹⁷. The idea was halted at that time but resurfaced in 1955 with President Gamal Abdel Nasser's decision to move the statue of Ramses II to Ramses Square, before it was relocated in 2006 to the Grand Egyptian Museum at Giza.

1.4 Between Science and Politics: The Underlying Contradiction

Clarke's role cannot be understood without recognizing the contradiction that shaped the context of his work. On one hand, he was a serious researcher who sought to study Egyptian architecture scientifically. His published works, such as his book on Coptic churches (co-authored with Creswell), contributed to enriching Western knowledge of this heritage.

On the other hand, his work took place within the framework of a British colonial project that had clear political and administrative objectives. Heritage preservation was not free from propagandistic dimensions, as it was sometimes used to highlight Britain's image as a "protector of antiquities," serving to legitimize its presence in Egypt¹⁸.

Here arises the question: Was Clarke genuinely devoted to the idea of heritage itself, or was he merely a tool in the hands of a colonial authority? The answer cannot be one-sided, as his personality seems to have combined a genuine scientific motivation with an objective integration into the colonial structure.

2. Theoretical Foundation: Documenting Traditional Building Techniques

The intellectual output of Somers Clarke in documenting traditional building techniques represents a milestone in Egyptian architectural studies. His concept of 'practical sustainability' represents a distinct development within the European critique of industrialization. However, it was characterized by unique features that set it apart. While William Morris's movement leaned towards idealism and craftsmanship, Clarke favored solutions that were widely applicable. Whereas the orientalist current focused on aesthetics, Clarke was concerned with functional performance and construction efficiency. This distinction made his sustainability a bridge between the romantic critique of modernity and the search for practical alternatives within the colonial context.

Clarke's sustainability formed a composite response to the architectural crises of his era, combining four integrated dimensions:

¹⁶Creswell, K. A. C. *The Muslim Architecture of Egypt, Part I: Ikhshids and Fatimids* (Oxford: Clarendon Press, 1952), 155.

¹⁷Clarke, S. "On the Proposed Removal of a Statue of Rameses," *Journal of the Society of Antiquaries of London* 65 (1913): 112–114.

¹⁸Reid, D. M. *Contesting Antiquity in Egypt: Archaeologies, Museums, and the Struggle for Identities from World War I to Nasser* (Cairo: American University in Cairo Press, 2015), 22.

Environmental dimension: Through his scientific critique of imported building materials unsuitable for the hot, dry climate, and his demonstration of the superiority of local techniques in thermal insulation and natural ventilation.

Economic dimension: By proving the efficiency of using available local resources and reducing reliance on expensive imports, at a time when Egypt was under economic pressures during the occupation.

Civilizational dimension: By preserving the continuity of Egyptian building traditions through the ages, while developing them to suit modern requirements without breaking from heritage.

Social dimension: Through training local craftsmen and developing their skills, giving his sustainability a developmental aspect that goes beyond purely architectural concerns.

The development of this concept in his thought can be traced through three overlapping stages that formed a cumulative approach:

Foundational stage (1893-1900): During which he discovered the "self-sufficiency" of local techniques through excavations at Elkab and his Nile travels, and began systematically recording observations about their environmental and structural performance.

Systematic formulation stage (1901-1910): Where field observations transformed into a theoretical framework in his scientific articles, culminating in his 1908 article which represented the first systematic comparative analysis between the characteristics of local and imported materials.

This development formed the integrated methodological framework of his documentation work, combining scientific rigor with precise field observation. In his seminal article "The Use of Mud-Brick in Egypt" (1908), he provided a detailed comparative analysis highlighting that the spread of imported materials was not due to their suitability to the local environment but was a response to the trend of modernity and the imitation of European styles¹⁹. His book "Christian Monuments in the Nile Valley" (1912) represents a foundational work in the study of Coptic architecture, offering a scientific classification of church styles and a detailed analysis of dome and vault techniques, emphasizing the continuity of construction traditions and their structural efficiency²⁰.

Thus, Clarke's contribution was not limited to mere documentation but established a practical vision of sustainability rooted in a deep understanding of local environmental potentials and techniques, offering an early and influential critique of architectural modernity trajectories in Egypt.

2.1 Documentation and Analytical Methodology

Clarke's documentation work was distinguished by precise recording and analysis, where he detailed the processes of mud-brick preparation and provided an accurate analysis of the standard dimensions of bricks across different eras. His illustrative

¹⁹Clarke, S. "The Use of Mud-Brick in Egypt," *The Cairo Scientific Journal* (1908).

²⁰Reid, D. M. *Whose Pharaohs? Archaeology, Museums, and Egyptian National Identity from Napoleon to World War I* (Berkeley: University of California Press, 2002), 274-276.

drawings enriched the documentation work, going beyond explanatory functions to scientific analysis²¹.

His methodology was characterized by scientific criticism, as he compared historical documents with field observations, correcting many prevailing misconceptions about Egyptian construction techniques.

2.2 Practical Embodiment and Sustainability

Clarke's practical vision was evident in his design of the railway stations between Luxor and Aswan (Figure 5), where he applied theoretical concepts to real projects. The stations he designed in Edfu, El-Silsila, and Kom Ombo (Figure 6) represented a practical embodiment of his theories on sustainable architecture²².

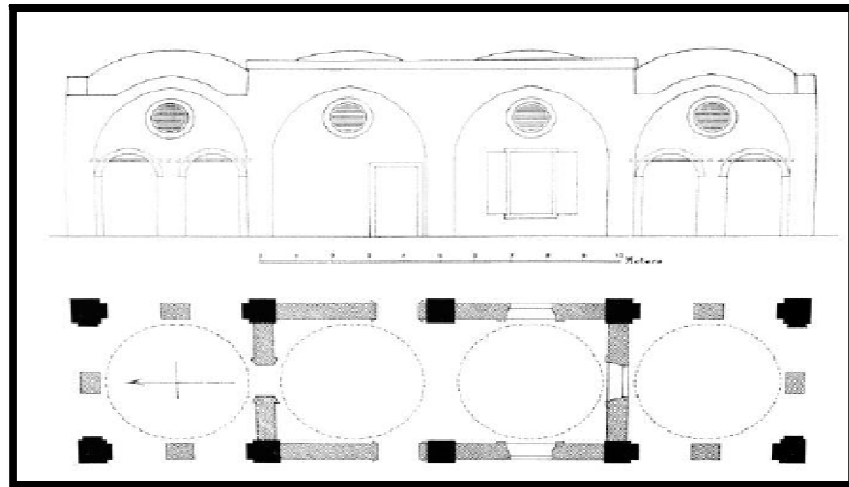


Figure 5: Plan of a mud brick railway station facade, and its horizontal plan, after Clarke, Somers. *The Use of Mud-Brick in Egypt*.



Figure 6: Four domes constructed from mud-brick within the workers' houses at the Edfu Railway Station, designed and executed by architect Somers Clarke, and still standing to this day. Photograph by the researchers.

²¹Clarke, S., and R. Engelbach. *Ancient Egyptian Masonry: The Building Craft* (Oxford: Clarendon Press, 1930).

²²Clarke, S. "The Use of Mud-Brick in Egypt," 45–48.

Despite the precision and comprehensiveness of Clarke's methodology, it was not without limitations. It relied heavily on observation without conducting extensive field experiments, and the quantitative analysis was limited to describing dimensions without studying the mechanical properties of materials. Additionally, it focused on technical aspects at the expense of social and cultural dimensions.

3. Elkab House: An Architectural Analysis of Practical Sustainability Philosophy

Having established Clarke's theoretical framework for sustainability, we now turn to its most profound embodiment: his own house at Elkab. Somers Clarke's house was built in Elkab area near the city of Edfu (Figure 7), with its location carefully chosen on a low rocky outcrop overlooking the Nile, near the ruins of the ancient Egyptian city of Elkab, which Clarke had known since 1893. This elevated site represented a practical response to the annual flooding phenomenon that affected the region before the construction of the High Dam. Clarke justified his choice of this remote location by saying: "The place where the building was constructed was somewhat untouched; it is a very poor area, so no one would consider establishing mills or large commercial buildings. I wanted the place to remain primitive and traditional,"²³ revealing his conscious inclination to preserve urban privacy.



Figure 7: Somers Clarke's House in Edfu. Photograph by the researchers.

The entire building was constructed from mud-brick on stone foundations, featuring a unique layout that included 26 rooms and was crowned with twenty-seven domes. The total area of the structure reached approximately one thousand square meters²⁴. Archival photographs and contemporary memoirs indicate that Clarke enlisted the skills of local builders to execute his project during 1906, with the building appearing harmonious with its surroundings even before completion (Figure 8).

²³Clarke, S. Quoted in Kamil, J. *Upper Egypt: The Antiquities from Amarna to Abu Simbel* (Cairo: American University in Cairo Press, 1987), 144.

²⁴Huyge, D., and N. Warner. *Report prepared by the Belgian Archaeological Mission*, 2010.



Figure 8: Clarke's house in Elkab, showing the construction of two domes above the entrance arcade (Photograph by Clarke, circa 1906). Courtesy Griffith Institute. University of Oxford, Somers Clarke Mss. 19.40.06.

The house consists of three main sections (Figure 9): the central section (Figure 9-A), which includes the main residential rooms and the entrance arcade; the eastern section (Figure 9-B), designated for services and connected to the main building via a vaulted corridor; and the western section (Figure 9-C), which was added later and overlooks the Nile directly. The northern façade exhibits remarkable architectural symmetry, centered by an arcade with stone columns covered by five domes supported on pointed arches²⁵ (Figure 10).

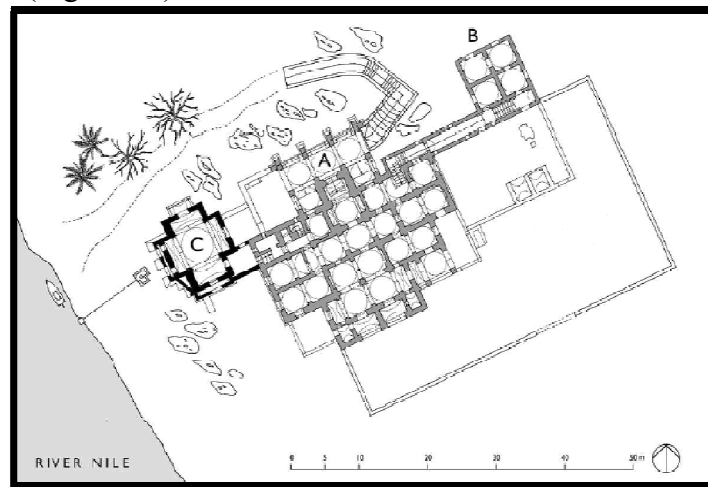


Figure 9: Plan of Clarke's House, showing the living area (A), the servants' wing (B), and the main bedroom (C), after Nicholas Warner, *An architect abroad. Life and work of Somers Clarke in Egypt. Mitteilungen des Deutschen Archäologischen Instituts Kairo* 68, 2012, 237–261, fig. 4.

²⁵Kindermann, K. "Bayt Clarke - Ein einzigartiges Zeugnis neuzeitlicher Lehmarchitektur in Ägypten" *Mitteilungen des Deutschen Archäologischen Instituts Kairo* 68 (2012): 5.



Figure 10: The ascending staircase leading to the entrance corridor of Somers Clarke's house, after Nicholas Warner, *Saving Bayt Clarke: a mud brick masterpiece by the Nile*. Bulletin of the American Research Center in Egypt 200, 2012, fig. 10.

Structurally, the arcade functions as a transitional element between the exterior and the vaulted interior. When the arcade partially collapsed in 2010, the restoration work revealed fine details such as the use of large inverted pottery vessels to fill voids, a traditional technique aimed at reducing weight and enhancing thermal insulation²⁶ (Figure 11).



Figure 11: Pottery vessels discovered in the collapsed front section of the building. Photographed by the researchers.

²⁶Fathy, H. *Architecture for the Poor: An Experiment in Rural Egypt* (Chicago: University of Chicago Press, 1973), 56–59.

The interior design features sequential spaces covered by soaring semi-spherical domes, transitioning from square to circular shapes through simple corner curves, with low iwans equipped with benches and hollowed wooden partitions²⁷.

Elkab House was not merely a personal residence but an experimental project addressing the challenges of its era: at a time when Egypt imported wood and cement at exorbitant prices, Clarke demonstrated that mud brick—which was regarded as a 'primitive' construction method—could create comfortable living spaces adapted to the climate. In an era dominated by the belief that modernity meant a break from heritage, he presented a model of intelligent continuity that evolved tradition without abandoning its wisdom.

3.1 Comparative Analysis: From Spontaneous Execution to Conscious Architectural Statement

Although Elkab House appears as an organic extension of local architecture, a deeper analysis reveals fundamental differences in approach and purpose. Local builders relied on knowledge transmitted orally and through practice. In contrast, Clarke aimed to scientifically document this craft knowledge. He sought to transform it into a codified system based on precise measurement and detailed drawing. His articles and detailed illustrative drawings were not mere records but attempts to extract general principles capable of development from craft practice.

At the design level, the most evident difference emerged. Whereas traditional houses were built using stereotypical or spontaneous plans, Elkab House design was based on a precise and premeditated architectural layout that combined traditional units into a complex and harmonious composition. This configuration, comprising 27 domes and 26 rooms, did not arise through random cumulative growth but was the product of a comprehensive vision embodied in plans and execution drawings.

3.2 Spatial and Symbolic Function

As for the spatial function, the distribution of elements was consistent with environmental and living needs. The main living rooms are located on the southern side, protected by covered balconies, while the central axis connects to the main balcony overlooking the Nile. The main section contained four bedrooms topped with double domes, along with the master bedroom suite added to the west, directly overlooking the river (Figure 12).



Figure 12: Overview of Clarke's House in Elkab showing the eastern balcony covered with semi-cylindrical arches and topped by a dome relatively lower compared to the other domes of the building. Photograph by the researchers.

²⁷Clarke, S. Christian Antiquities in the Nile Valley, p. 112–115.

The western wing is the most prominent manifestation of Clarke's vision, where he created a separate screening wall parallel to the southern and western facades, featuring pointed arches facing the room's windows directly. The intervening space was covered by an open vault²⁸ (Figure 13), allowing for shading of the walls and enhancing the flow of cool air in an early simulation of "natural air conditioning." This architectural solution demonstrates that Clarke was not merely imitating tradition but developing it based on a deep understanding of building physics.



Figure 13: View of the living room in Clarke's House before 1925, after Nicholas Warner, *Saving Bayt Clarke: a mud brick masterpiece by the Nile*, Bulletin of the American Research Center in Egypt 200, 2012, fig. 8.

3.3 Practical Sustainability: Between Philosophy and Application

Clarke's early environmental awareness is evident in his fundamental question about the viability of importing materials unsuitable for Egypt's climate. Through his methodology of direct observation, architectural drawing, and comparative analysis, Clarke developed what can be termed "practical sustainability." This vision was rooted in a pragmatic understanding of environmental and economic efficiency. It was founded on his firm belief that traditional architecture constitutes a complete system, proven successful over millennia.

This distinctive approach set him apart radically from contemporary European architects, many of whom limited themselves to importing Western styles, while he presented a hybrid model combining the authenticity of local references with contemporary application. However, this approach faced serious challenges, including institutional resistance within colonial circles, technical limitations in developing heritage technologies, and the absence of an institutional framework to support its continuity.

²⁸Clarke, S. *Christian Antiquities in the Nile Valley: A Contribution towards the Study of the Ancient Churches in Egypt* (Oxford: Clarendon Press, 1912), 45–47.

3.4 Preservation and Challenges

Since Clarke's death in 1926, the building has been used as the headquarters of the Belgian archaeological mission. Despite maintenance efforts, the building suffered several partial collapses, the most notable being the collapse of the main arcade in 2009 (Figure 14), likely due to drainage problems and insufficient binding materials. Restoration operations required the manufacture of more than 70,000 mud bricks with dimensions matching the original, confirming the continuity of the model Clarke introduced²⁹.



Figure 14: View of the eastern side of the arcade, 2009 after the collapse, after Nicholas Warner, *Saving Bayt Clarke: a mud brick masterpiece by the Nile*, fig. 10.

Over more than a century, Elkab House has proven the viability of earthen architecture not only as heritage to be preserved but as a sustainable model that can inspire contemporary solutions to environmental and energy crises. Clarke succeeded in transforming mud bricks and Nubian domes from "traditional" building materials into a conscious and proven choice that combines the wisdom of the past with present awareness.

4. Organic Influence: Coptic Architecture and Its Embodiment in Clarke's Architectural Thought - From Theory to Practice

An analysis of Somers Clarke's intellectual and architectural output reveals an evolving organic relationship with Coptic architecture, manifested in his transition from academic study to practical application, surpassing the prevailing view of his era that treated this architecture as a secondary archaeological layer.

This influence is evident in the design of his house in the Coptic area through a reinterpretation of the Coptic model, where he transformed the domed units from a closed structural system into a flexible element adaptable to the demands of contemporary housing, while enhancing environmental performance through innovative ventilation solutions. This influence extended to his public projects, such as the Anglican Church in Aswan and railway stations, where he transformed the dome from a traditional element into a modular, repeatable unit in modern structures.

²⁹Kindermann, K. "Bayt Clarke - Ein einzigartiges Zeugnis neuzeitlicher Lehmarchitektur in Ägypten" 6-7.

4.1 Theoretical Foundations: From Academic Classification to Comparative Analysis

Clarke's approach to studying Coptic architecture was distinguished by a conscious linkage between form, function, and climate. His classification of churches—especially what he termed "Type (C)" with interconnected domed units—was not merely academic but formed an analytical framework that revealed an advanced environmental and structural logic in Coptic architecture. Clarke expressed regret over the demolition of many of these monuments by archaeological missions that regarded them as a transient layer on ancient Egyptian history, demonstrating an early awareness of the importance of cultural continuity³⁰.

4.2 Design Transformation: Reinterpreting the Coptic Model in Elkab House

The profound influence of Coptic architecture is evident in the design of Clarke's house in Elkab through its comparison with the exemplary model in the Church of Deir Pachomius in the village of Madamoud (Figure 15). Clarke developed the Coptic style by reinterpreting the domed unit, transforming it from a closed structural system into a flexible element adaptable to contemporary housing requirements. He also advanced environmental performance by enhancing the efficiency of natural climate systems through the integration of innovative ventilation solutions. Additionally, by incorporating functional elements, living spaces were added to meet modern needs without compromising the traditional structural logic.

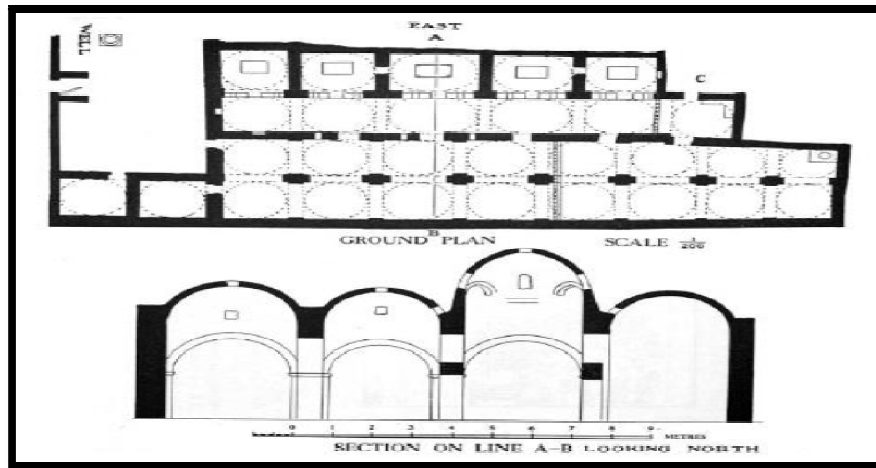


Figure 15: Plan of the Church of Saint Pachomius in the village of Madamut, north of Luxor, after Clarke, *Christian Antiquities*, Fig. 36.

4.3 Practical Embodiment: From Church to Railway Stations

The influence of Coptic architecture extended beyond Clarke's personal house to include his public projects. In the Anglican Church of Aswan (1910), Clarke succeeded in presenting a distinctive model that reconciles the liturgical requirements of Anglican worship with the local urban environment. By using local materials (sandstone, red brick) and employing climatic elements (shaded verandas, passive

³⁰Clarke, S. *Christian Antiquities in the Nile Valley*, 115–118.

ventilation systems), he was able to create a church building that embodies the spirit of local architecture while addressing the needs of the British community³¹.

As for the railway stations between Luxor and Aswan, they represent the pinnacle of Clarke's design thinking, where he transformed the Nubian dome from a traditional element in local architecture into a modular unit that can be replicated in modern facilities. He achieved structural efficiency through balanced load distribution and functional flexibility by allowing the addition of new units as needed, alongside environmental sustainability by utilizing the domes' natural properties for ventilation and thermal insulation.

4.4 Cognitive Sustainability: A Civilizational Dialogue across Ages

Clarke's experience with Coptic architecture can be seen as a form of "cognitive sustainability," where he employed past techniques to address present challenges. This explains the enduring impact of these projects, as the Edfu station—despite being over a century old—still delivers outstanding environmental performance.

It is noteworthy that Clarke's approach was not a dependent relationship with heritage but a creative dialogue between two heritages: the local building tradition and his personal heritage as an English Gothic architect. This dialogue produced a unique architectural language, making his projects an inspiring model for studies on cultural fusion and sustainable architecture.

Conclusion

This study reveals that the architectural legacy of Somers Clarke in Egypt transcends individual achievement, representing an early and mature experiment in applying the principles of contextual sustainability before the concept was formally articulated in contemporary discourse. Clarke demonstrated exceptional awareness of the necessity to reconcile local architectural traditions with modern scientific standards, establishing himself as a pioneer in bridging authenticity and experimentation. The findings confirm that his works—particularly his residence at Elkab and various railway stations—embodied an advanced paradigm that respected both the physical environment and cultural identity, while simultaneously fulfilling functional and aesthetic requirements.

Nevertheless, this research demonstrates that Clarke's professional journey faced significant challenges, foremost among them navigating the inherent contradiction between his scientific allegiance to heritage and his administrative affiliation with the colonial project. He encountered resistance from colonial circles reluctant to embrace his appreciation for local architecture, while also confronting technical and economic constraints that limited the full realization of some projects. Recognizing these challenges enables a more balanced and realistic assessment of his legacy, revealing that his achievements resulted not from favorable circumstances but from intellectual and professional perseverance within a complex historical context.

Based on these findings, the study recommends re-examining the works of foreign architects in Egypt—including Clarke—as valuable sources for critical learning about early sustainability concepts, rather than treating them merely as documentary

³¹Clarke, S. *Christian Antiquities in the Nile Valley: A Contribution towards the Study of the Ancient Churches*, 27–29.

examples. It further suggests conducting comparative studies between Clarke's methodology and those of his Egyptian and foreign contemporaries to explore mutual influences in shaping architectural discourse. Contemporary academic and professional institutions could benefit from this legacy by integrating it into educational and design curricula as a reference for understanding the dynamic relationship between context, history, and architectural identity.

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