BIRKHÄUSER

Adaptive REUSE

Extending the Lives of Buildings

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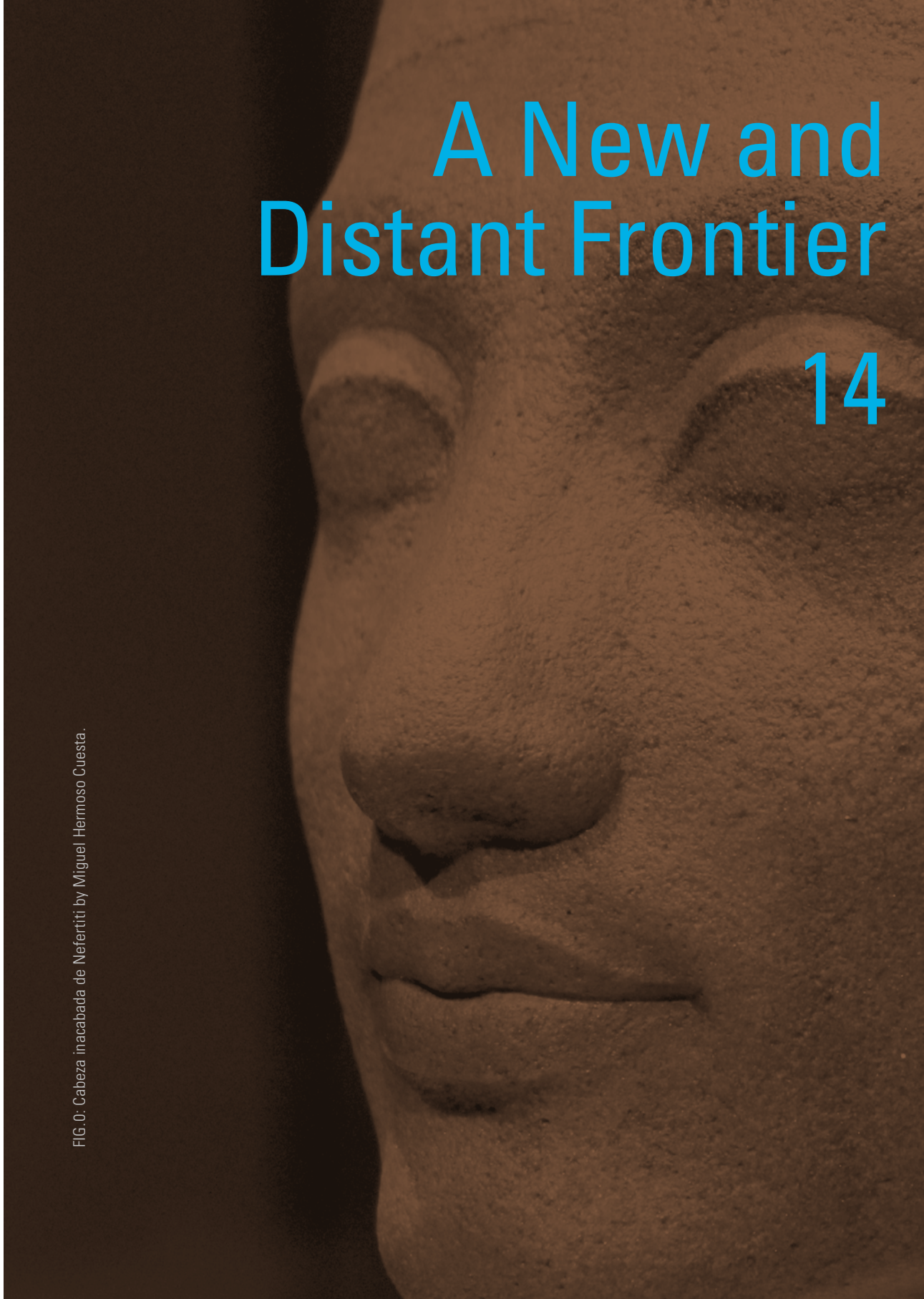
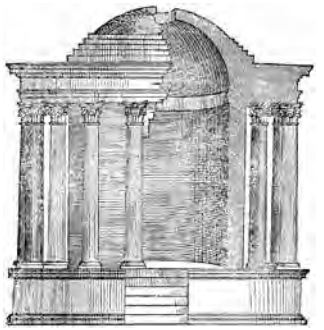


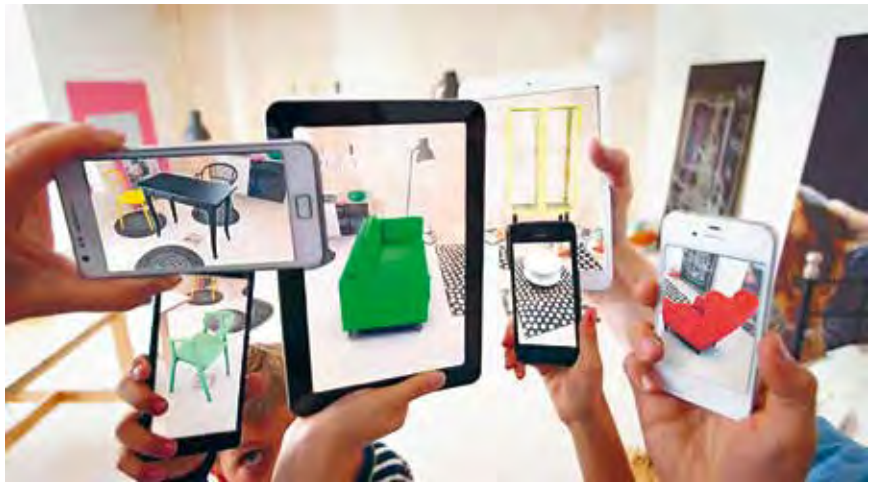
FIG. 0: Cabeza inacabada de Nefertiti by Miguel Hermoso Cuesta.

Mention of restoration conjures Eugène Viollet-le-Duc and his much-quoted 1875 definition "that [t]o restore a building is not to preserve it, to repair, or rebuild … [but] to re-instate it in a condition of completeness which could never have existed at any given time."[1] The ensuing anti-restoration sentiments, which subsequently led to the beginnings of the conservation movement, focused in great part on Viollet-le-Duc's reliance on conjecture. In the face of unknown territory, without documentation of what existed before, the speculative nature of such restoration prompted a discourse on authenticity that continues, more than a century later, today. In the often overlooked continuation of his definition, Viollet-le-Duc cautions that "[i]t is only since the first quarter of the present century that the idea of restoring buildings of another age has been entertained; and we are not aware that a clear definition of architectural restoration has as yet been given. Perhaps it may be as well to endeavour at the outset to gain an exact notion of what we understand, or ought to understand, by a restoration …"[2] Writing in 1875, Viollet-le-Duc would have encountered the 1832 definition of restoration in the writings of his countryman and Secretary of the Académie des Beaux-Art, Quatremère de Quincy, equating restoration generally to "the re-establishment of parts of a building more or less damaged …"[3] He would also have been acquainted with the advocacy of Ludovic Vitet and Prosper Mérimée, who both held the position of Inspector General of the *Commission des monuments historiques*, for a critical approach to restoration based on architectural surveys and measured drawings. But in the latter half of the 19th century, such information was scant, as this type of documentation was the product of laborious and intensive tasks. (figs. 1a–b)

In the first quarter of the 21st century, restoration and conservation have dramatically evolved, especially through technology and the many tools it has



FIGS.1a–b: The engravings and writings of Serlio and Palladio are examples of resources available in the 19th century.



FIGS.2a–b: Thermography and augmented reality are examples of the many new means enabled by today's technology for restoration, duplication and visualization.

engendered. With changed methods, the notion of what we preserve and how we do it has greatly expanded since the late 19th century. Together, the means and the mind-set of our time redefine the acts of preservation.

Adaptive reuse, the legacy of these debates on restoration and conservation, has also evolved since the latter half of the 20th century, when key legislation such as the Venice Charter of 1964 first addressed the need for "some socially useful purpose" in the conservation of monuments. If the 20th century established an adaptive reuse practice based on alterations that bestow new use within the built existing environment, today we confront the possibilities of an adaptive reuse practice at a new frontier. (figs. 2a–b)

Restoration's first opponents focused on the confines of the era and the impossibility of "this kind of forgery."[4] William Morris stated in his 1887 *Manifesto* that in this respect, "knowledge failed the builders."[5] By the 1920s, the advances of the 20th century presaged a metamorphosis as expressed by French poet and philosopher Paul Valéry: "Our fine arts were developed, their types and uses were established, in times very different from the present, by men whose power of action upon things was insignificant in comparison with ours. But the amazing growth of our techniques, the adaptability and precision they have attained, the ideas and habits they are creating, make it a certainty that profound changes are impending in the ancient craft of the Beautiful … We must expect great innovations to transform the entire technique of the arts, thereby affecting artistic invention itself and perhaps even bringing about an amazing change in our very notion of art."[6] These sentiments are entirely applicable today, where the innovations of the late 20th and the early 21st centuries have led to unprecedented developments affecting much of modern life. In conservation and adaptive reuse, completely altered building construction practices expand the limits of practice. The

FIGS.3a–b: The UNESCO heritage site of Hallstatt in Austria, and its duplicate in Luoyang, China.

technological advances of the recent decades have indeed transformed not only the art but also the *notion* of art. In adaptive reuse, this manifests itself physically through innovative construction means and conceptually through the interpretation of the field in new realms. If early conservation resulted from imperfect means such as those defined by Quatremère de Quincy, in which "it suffices for one to know some fragments of columns, entablature and capitals of columns of a Greek architecture to rediscover at least the order of the temple …,"[7] then what are the implications of the new tools and methodologies that enable a more perfect means, informed by precise and readily available information?

In "The Lamp of Memory," John Ruskin asked: "What copying can there be of surfaces that have been worn half an inch down? The whole finish of the work was in the half inch that is gone …"[8] In the 19th century of Morris and Ruskin, the knowledge of a structure required for its replication was derived primarily from publications such as those of Vitruvius, Serlio, Palladio and, in the late 18th century, Stuart and Revett. These books documented works of antiquity and perpetuated Classical ideals. Neoclassical works of architects such as Robert Adam, William Chambers and John Soane, by no means replications, also reflect this influence. Today, technology such as digitization, 3D laser and infared radiation expands the possibilities of replication far beyond the inspiration of period pattern books. A wealth of new and smart tools have emerged for building scans, materials diagnostics, physio-mechanical and non-invasive testing, surveying and general heritage science. Digital reconstructions are based in three-dimensional measurements, scanning and modeling. There is now a very real potential for producing full and accurate copies of existing objects and structures. Today the knowledge that "failed" Morris' stone chiseling builders exists.

In 1997, the Austrian town of Hallstatt, an ancient salt mining and production town in an extraordinary Alpine setting, received UNESCO World Heritage

FIGS.4a–c: Housing blocks on Boulevard Haussmann in Paris serve as the mold for the cast facade of Édouard François' Fouquet's Barrière Hotel.

designation as a "cultural landscape [that] has retained a degree of authenticity in nature and society."[9] In 2012, a duplication of Hallstatt opened in Luoyang, China, as a housing development. In 2006, several buildings in an urban block of Paris known as Triangle d'Or were renovated as Fouquet's Barrière Hotel. The upgrade of the building facades, including one from the 1970s, constituted a major part of this project. Referencing a 19th-century vision of Paris, a new concrete facade in the form of a molded casting that replicated nearby Haussmannian facades was directly applied to the existing structure. New apertures were subsequently placed within these duplicated concrete facades, dictated by the interior functions and unrelated to those of the Haussmann duplicates. In 2012, artist Do Ho Suh reconstructed the house in which he lived as a student in Providence, Rhode Island, USA, at full scale and in silk. Replicated to the minutiae, this ghostly translucent house

FIG.5: *Home Within Home* by sculptor Do Ho Suh recreates his temporary home in Providence, RI, in silk and at full scale.

FIGS.6a–b: The residence of an SS commandant at Kamp Westerbork, transformed to a museum and education center.

floats in different galleries, including the Museum of Modern and Contemporary Art in Seoul, Korea. Through the new possibilities of technology, these 21st-century projects demonstrate and thereby redefine the ability to replicate existing structures with unerring accuracy. (figs. 3a–b, 4a–c, 5)

The matter of authenticity, central to the 19th-century controversy to "restore" damaged French monuments to their earlier and whole existence, does not exist in these examples. The replications are not attempts at preserving a physical object or structure. They embrace Walter Benjamin's belief that "[t]he presence of the original is the prerequisite to the concept of authenticity,"[10] and thus the clear absence of the original in these examples already negates all such claims. Instead, the replicated structures exist as new structures through the reuse of the existing ones as symbols. They gain a new "aura"[11] through such reuse. In China, where knock-offs are the norm, the aura of the replicated village lies in Hallstatt's authenticity as a UNESCO site; in the 8th arrondissement of Paris, the hotel's aura is established through a connection to the Haussmannian past in a facade that acts as a physical demonstration of time, past and present; in the galleries, the aura of the house lies in the act of recall. These replications embrace the sentiments of Viollet-le-Duc in creating a new state of "completeness which could never have existed at any given time." Benjamin speaks of mechanical reproduction as "the desire of contemporary masses to bring things 'closer' spatially and humanly."[12] In reproducing an ideal of an existing structure rather than the structure itself, these projects, through new use, extend the metaphysical distance between what was and what is.

In 2015, the former residence of the SS commander at Kamp Westerbork, a former Nazi concentration camp in the Netherlands and since declared a national monument, was converted to an educational center. This conversion was achieved by encapsulating the clapboard house within an inhabitable glass box, as both an act of preservation and of reuse. Objectified within a colossal, climate-controlled vitrine, the residence is preserved *in situ* and in perpetuity. In contrast to the projects of replication, the original exists in this project, fulfilling Benjamin's prerequisite for authenticity. Yet it remains imprisoned in time, serving a symbolic life sentence as a witness to history. While not by any means a replication, this type of preservation, made possible by new notions of art, also detaches an original from the past. (figs. 6a–b)

Distance is at the heart of another strategy for heritage preservation: translocation, the process of moving a structure from one location to another. An age-old strategy, translocation consists of lifting a structure and transferring it onto a movable platform. With low-tech means such as wood cribbing and jacks, structures have been relocated for thousands of years.[13] Most often, this process is a last-resort measure of protection when a structure is physically threatened in its original site. Some known examples are: the Marble Arch in London, Great Britain, moved in 1851 from the edge of Buckingham Palace to Hyde Park due to the palace's expansion; and the 1999 move of

FIGS.7a–b: The translocation of the Cape Hatteras Lighthouse in North Carolina.

the seven historic structures of the 1870 Cape Hatteras Lighthouse & Station in North Carolina, USA, 885 meters from the original site, due to the impact of shoreline erosion on their foundations. An alternate method of translocation transports disassembled structures, rather than whole ones, that are reassembled on their new sites. This method was used with moves such as that of the 1244 BC Abu Simbel complex in southern Egypt. The temple was cut into pieces and transported higher up the bank of the Nile River to save it from the imminent inundation caused by the construction of the Aswan Dam. In these examples, translocation is an act of preservation that introduces a physical distance between the original and the moved structure. (figs. 7a–b, 8a–b)

Enhanced means of construction today permit translocation of not only a single building but also of high-rises and large structures, while enhanced modes of transportation permit translocation from afar. With such newfound potential, the use of translocation as a strategy has expanded beyond heritage protection. In 1968, John Rennie's 1831 London Bridge was deemed structurally insufficient to support the demands of the future and auctioned off to the highest bidder, Robert McCulloch. An entrepreneur, McCullough founded the town of Lake Havasu City, Arizona, USA, in 1963 out of 67.3 square kilometers of desert. With great hopes that the historic bridge would lend a validity to this newly founded town, the bridge was transported in pieces, reassembled, reconstructed on ground and connected to the lake through a dredged canal. In its transatlantic relocation, London Bridge was transformed from infrastructure to a means for legitimacy. In 1997, the 18th-century Yin Yu Tang House, a relocated late Qing Dynasty merchant residence from southwestern China, was disassembled and transported in pieces to the USA. Its relocation to the Peabody Essex Museum in Salem, Massachusetts, as a

FIGS.8a–b: The translocation of the Abu Simbel complex in Egypt.

FIGS.9a–b: The 1831 London Bridge in its original location in London and in its new location at Lake Havasu in Arizona.

permanent cultural exhibit, transformed it from an abandoned domestic structure to museum object. (figs. 9a–b, 10)

With present-day means and methods such processes, once unimaginable, unleash a new breed of actions in the name of preservation. The reuse of the Yin Yu Tang as both exhibit and object, the reuse of London Bridge as pedigree, the reuse of a Haussmann facade as "wallpaper," the reuse of a house as memory, the use of a house as witness—these are transformations in space and time. How do we classify such work? Is it preservation? Is it restoration? Is it reuse? How do we justify such acts? What are we preserving? What of authenticity? How do we determine when extraordinary means are required and justify the enormous expense involved? What are the ethics in this new frontier?

FIG.10: The Yin Yu Tang House within its new context of the Peabody Essex Museum, Salem, MA.

While qualification of such recent endeavors are difficult to place within the context of history, as new directions do they in fact parallel developments in preservation practices since the latter half of the 20th century? Since the seminal adoption of the Venice Charter in 1964, the definition of heritage has expanded to include much more than monuments. The United Nations Educational, Scientific and Cultural Organization (UNESCO), for example, whose mission since its inception in 1945 is "in building intercultural understanding through protection of heritage,"[14] has expanded its interpretations of this heritage. Today, UNESCO protection includes everything from "our cherished historic monuments and museums … to traditional practices and contemporary art forms" but also "intangible and underwater heritage, museum collections, oral traditions and other forms of heritage …"[15] Recent interpretations of conservation from around the world reflect similar change: ICOMOS New Zealand Charter's 2010 definition that "[t]he purpose of conservation is to care for places of cultural heritage value"; the Burra Charter's 2013 definition that "Conservation means all the processes of looking after a place so as to retain its cultural significance"; INTACH's (Indian National Trust for Art and Cultural Heritage) 2016 Charter that "[t]he objective of conservation is to maintain the significance of the architectural heritage or site. Significance is constituted in both the tangible and intangible forms." In such a broadened arena of definition lies the possibility of novel interpretations.

As in artist Do Ho Suh's re-creation of physical domestic structures in ephemeral materials, artist Edoardo Tresoldi has re-created a similar object but

FIG.11: Artist Edoardo Tresoldi recreates in wire a full-scale interpretation of the 11th-century basilica that once stood on the site of Santa Maria di Siponto, Foggia.

within an archaeological site in Apulia, Italy. Constructed from seven tons of wire mesh and placed directly above its archaeological remains, the artist's installation is an interpretation of an 11th-century Paleo-Christian basilica that once stood upon the site of Santa Maria Maggiore di Siponto.[16] A conjecture, albeit with detailed architectural elements such as columns and arches, Tresoldi's reconstruction in insubstantial material has been likened to "a hologram projected onto the site."[17] Apropos of conjecture, the wire mesh wields an ethereal presence that is almost invisible from a distance. In contrast to Viollet-le-Duc's full reconstruction of Carcassonne with similarly scant remaining evidence, Tresoldi's concept and choice of materials resurrect the past lightly as a distant reinterpretation. Supported by the Minister of Culture with the objective to raise awareness of Siponto's significance as a Roman colony and port from 194 BC, this re-creation of the basilica has revived an interest in this part of Foggia's history. (fig. 11)

In contrast is the "reconstruction," currently in fabrication, of a Roman triumphal arch from Palmyra, Syria, that was destroyed in 2015 by ISIS militants. In the marble quarries of Carrara, Italy, a full-scale 120-ton replica is in the process of being carved out of Egyptian marble from a 3-D digital model generated from photos taken over the years. Intended for an installation in London demonstrating such reconstruction as propaganda, this model reinforces the idea of the Institute of Digital Archaeology that "[e]very time we resurrect from the rubble one of these monuments, it undercuts the message of fear and ignorance that these people are trying to spread."[18] With the 2016 ouster of the ISIS militants from Palmyra, Syria, there is speculation of placing the duplicate onto the actual site of the destroyed arch. In comparison to Tresoldi's installation at the Santa Maria Maggiore di Siponto, the installation of the replicated arch in its original location and material reawakens questions of authenticity. How does technologically enabled precision change this ongoing debate? Does the political urgency at Palmyra justify a reproduction of destroyed heritage? What is its significance as a copy on the original site? Would the replica serve a new use as a symbol of fortitude and resilience in the face of terrorism? (figs. 12a–b)

FIGS.12a–b: The city of Palmyra in Syria, including the Marble Arch, prior to destruction by ISIS.

FIG.13

In the wake of ISIS' destruction at Palmyra, cultural organizations now engage in prophylactic documentation of ancient sites in threatened locations. In such information and its inherent potential lies a promise of resurrection. What are the implications in the greater world? In the era of Internet activism, artists recently visiting the Neues Museum in Berlin, Germany, scanned the bust of Nefertiti, in secret, using mobile devices. The release of these files on the Internet under a Creative Commons license enables anyone to download and 3D-print accurate copies of the head of Egyptian Pharoah Akhenaten's royal wife. Is such action the realization of Benjamin's "masses" "overcoming the uniqueness of every reality by accepting its reproduction"[19]? Are these reproductions that "substitute plurality of copies for a unique existence" and promote a "liquidation of the traditional value of the cultural heritage"[20]? Or is this trend akin to an iteration of the flowering of the Roman world between the 1st and the 3rd centuries AD that witnessed a wholesale replication of Greek sculpture from 500 years earlier? Replication in turn is a product of a variety of approaches, as many Roman sculptures were "purely Roman" while others were "carefully measured, exact copies or variants of Greek prototypes …"[21] Millennia later, the unabashed replication of Greek culture and beauty "often provide our primary visual evidence of masterpieces …"[22] (fig. 13)

At a time when people inhabit not only physical but virtual spaces in their everyday lives, these new possibilities of replication in the early 21st century may well in the near future become virtual ones, where distances between the original work and the replication become physically nearer and metaphysically farther apart. Prompted by events in the world today, the questions of authenticity, and ultimately authority, once raised and responded to in the mid- to late 19th century, are resurfacing in a new dialogue. Technology complicates the debate with the existence of the knowledge that "failed" Morris' builders. We now stand at the edge of a new frontier. New steps forward are full of potential but also grave implications.

1 Eugène Viollet-le-Duc, *On Restoration* (London: Sampson Low, Marston, Low and Searle, 1875), p. 9. 2 Ibid. 3 Quatremère de Quincy, *Dictionnaire Historique d'Architecture* (Paris: Librairie d'Adrien Le Clere, 1832). 4 William Morris, "The Manifesto," SPAB Society for the Protection of Ancient Buildings, 1887, from SPAB website, https://www.spab.org.uk/what-is-spab-/the-manifesto/ (accessed March 13, 2016). 5 Ibid. 6 Paul Valéry, "La conquête de l'ubiquité, Une édition électronique réalisée à partir du texte de Paul Valéry, « La conquête de l'ubiquité » (1928)", in *Œuvres, tome II, Pièces sur l'art*, Nrf, Gallimard, Bibl. de la Pléiade, 1960, pp. 1283–1287. 7 "Restauration. On sait qu'il suffit très-souvent de quelques framens de colonnes, d'entablemens et de chapiteaux d'une architecture grecque, pour retrouver du moins l'ensemble d'une ordonnance de temple." Quatremère de Quincy, *Dictionnaire Historique d'Architecture* (Paris: Librairie d'Adrien Le Clere, 1832), English translation by Veronica Dewey. 8 John Ruskin, *The Seven Lamps of Architecture* (Kent: George Allen, 1889), p. 195. 9 Hallstatt-Dachstein/ Salzkammergut Cultural Landscape, UNESCO website, http://whc.unesco.org/en/list/806 (accessed April 7, 2016). 10 Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction," (1936) in Hannah Arendt, ed., *Illuminations*, (New York, NY: Schocken Books, 1969), p. 222. 11 Walter Benjamin in "The Work of Art in the Age of Mechanical Reproduction" defines aura as "uniqueness." Other definitions include "distinctive quality" or "force emanating from somebody or something." 12 Benjamin, p. 223. 13 Definition of "relocation" from "The Appleton Charter for the Protection and Enhancement of the Built Environment", ICOMOS Canada, August 1983. 14 UNESCO website, http://en.unesco.org/about-us/introducing-unesco (accessed November 4, 2016). 15 Ibid. 16 Paolo Conti, "Siponto: con la rete metallica ricostruita basilica del XII secolo," *Corriere della Sera*, March 12, 2016. 17 "A Significant Wow Factor: Airy Resurrection of an Ancient Basilica," *Detail* Blog, http://www.detail-online.com/blog-article/a-signifcant-wow-factor-airy-resurrection-of-an-ancient-basilica-27317/ (accessed April 14, 2016). 18 Stephen Farrell, "If All Else Fails, 3D Models and Robots Might Rebuild Palmyra," *The New York Times*, March 28, 2016. 19 Benjamin, p. 223. 20 Benjamin, p. 221. 21 Department of Greek and Roman Art, "Roman Copies of Greek Statues," in *Heilbrunn Timeline of Art History* (New York, NY: The Metropolitan Museum of Art, 2000–), http://www.metmuseum.org/toah/hd/rogr/hd_rogr.htm (accessed October 2002). 22 Ibid.