

UC Berkeley

Room One Thousand

Title

The Art of Mud Building in Djenné, Mali

Permalink

<https://escholarship.org/uc/item/9zc3j356>

Journal

Room One Thousand, 4(4)

ISSN

2328-4161

Author

Marchand, Trevor H.J.

Publication Date

2016

Copyright Information

Copyright 2016 by the author(s). All rights reserved unless otherwise indicated. Contact the author(s) for any necessary permissions. Learn more at <https://escholarship.org/terms>

Peer reviewed



The Art of Mud Building in Djenné, Mali

I first visited Djenné as a traveller in 1989. At that time, Mali was only just beginning to emerge from two decades of devastating drought. President Moussa Traoré continued to control the country with an iron grip, and overland travel was difficult at best. It was possible, however, for non-Muslims to visit the Mosque in Djenné and, for a small fee paid to its guardian, to access the roof and delight in the panoramic view over the offerings of the Monday market. I returned to the town in 2000, this time as an anthropologist to study the apprenticeship system and building-craft knowledge of the local masons. I carried out two seasons of fieldwork, and subsequently made numerous visits to the Djenné, including documentary film shoots in 2005 and 2012. An exhibition on the *Mud Masons of Mali*, co-curated with Mary Jo Arnoldi, is currently on view at the Smithsonian National Museum of Natural History in Washington DC, and features my documentary film, *Masons of Djenné*.¹

I came to anthropology as a trained architect with several years of design and on-site experience. My motives as an anthropologist were to investigate the nature of building-craft knowledge and to learn about the learning, and the lives, of craftspeople. In particular, I was intrigued how myriad skills are acquired and honed “on the job”, and the ways that intelligent handwork becomes inextricably linked with social and professional identities. As a fieldworker, I have developed an apprentice-style method of research. In other words, I train and labour over long periods as a member within communities of craftsmen, and establish a solid rapport with my fellow workers. In this exchange of toil for ethnographic knowledge, my physical contribution offers me privileged access to skilled practices, mistakes, problem-solving tactics, emotional engagement, hierarchies of power, and

¹ My anthropological fieldwork, supported by the British Academy and the School of Oriental & African Studies, resulted in a number of publications including a monograph (2009), as well as an earlier documentary film *The Future of Mud: tales of houses and lives in Djenné* (2007, co-produced with Director Susan Vogel and Samuel Sidibé), and a 2010 exhibition at London’s Royal Institute of British Architects.

displays of “expertise” by my fellow workers, as well as the social and cultural contexts in which these unfold. Regular schedules of long hours, and immersion in what are often repetitive, and sometimes arduous, manual tasks allows for close observation and verification, resulting in more detailed understanding of both artisan techniques and the modes of communication involved in teaching and learning building crafts.

My first decade of field studies focused on “traditional” masons, whom I characterise as those responsible for both design and building without use of measured drawings or formal engineering principles. Typically, such masons employ local materials and indigenous technologies; their structural knowledge is a tried-and-tested one, and their intuition is rooted in practice-based apprenticeship systems rather than institutionalised training regimes. The masons whom I worked alongside in Mali, like those I had worked with earlier in Yemen (2001), did not produce buildings in accordance with an architect’s template. Rather these men were intimately involved in both the conceptualisation and realisation of form and space through their direct physical engagement in making. In effect, ideas took shape in the coordinated activities of eyes, ears, hands, and tools.

The art of mud building

Nestled in a weave of gentle waterways along the Bani River, Djenné, now a town of about 12,000 inhabitants, was once a powerful centre of West African trade and Islamic scholarship. Both of these activities continue today, though with considerably diminished vigour. Twentieth-century trade largely bypassed Djenné, leaving the community physically isolated from the single tarmac road that connects Mali’s capital, Bamako, to the northern regions of the country. During the annual rains Djenné becomes an island, naturally defended by a riverine network where local residents fish and cultivate fields of rice and vegetables. Annual deposits of alluvial silts rich in organic materials are ideally suited to making the mud bricks, mortar, and plasters of Djenné’s world-renowned architecture. Its best-known landmark is the grand Mosque, reputed to be the largest single mud building in the world, and famously depicted on early colonial postage stamps and postcards. Together with the Mosque, the town’s ensemble of unique “Moroccan” and “Tukolor” style mud-brick houses, densely organised in ancient residential quarters, has made this historic urban centre an icon among UNESCO’s World Heritage Sites.

Like the muddy banks of the nearby Bani River, Djenné’s houses are in a perpetual state of flux and change: eroding and collapsing, being modified and regenerated as individual families grow and contract over generations. Brickmaking and building activities take place during the dry winter season when river levels subside leaving the surrounding floodplain dotted with small pools. A variety of mud plasters are prepared using laterite soil, supplemented



with quantities of chopped straw, dry rice husks, or cow manure, and less commonly with tiny pebbles, ash, earth from termite mounds, powdered baobab fruit, or *karité* (shea-nut) butter. Left to ferment, the additives improve cohesion, durability, and water resistance.

For brickmaking, a small rectangular wooden mould assembled from four pieces of sawn timber is employed. These rectangular bricks have been coined *tubaabu ferey*, or “white-man’s brick”, because it is popularly believed that the French introduced the quick-and-easy slip form to the region in the early 1930s. Prior to this date, a smaller, denser cylindrical brick, shaped and pre-stressed by hand, was uniquely used and referred to as *djenné ferey*. The manufacture and use of these bricks was reintroduced in 2009 with the extensive restoration project for the Mosque under the stewardship of the Aga Khan Trust for Culture.²

² See Marchand (2015) for a detailed discussion of the Mosque and its restoration.



Building sites in Djenné are important places for socialisation and the construction of ethnic and gender identities. Folk histories are recounted, cultural lore is exchanged, and team members participate in inter-ethnic joking relations, most notably between the dominantly Bozo masons and their Dogon labourers. For Bozos, socialisation within their ethnic community reinforces their autochthonous status in the locality as well as the group's historic ties to both fishing and masonry practices. Competing masculinities figure prominently in the struggles for rank and respect.

Apprentices in the masonry trade normally commence their training in adolescence, though some are initiated as children who follow fathers, uncles, and older siblings to construction sites. The boys, sometimes as young as six or seven years old, are delegated simple tasks such as cleaning the mud from tools, passing bricks, and fetching glasses of sugar-saturated tea for the team members. As they grow older they take on greater responsibility and work more closely with the masons, learning hand skills through direct participation in the building work. The privileged position of an apprentice introduces the young man to the full range of tools, which includes the crowbar, plumb line, string-level, French level, tape measure, and two types of trowels – namely the large and sturdy *courou bibi* (“black-skin”) trowel manufactured by local blacksmiths and the delicate, sharply-pointed French trowel imported for the more refined work of sculpting decorative features on the building façade.

By assisting, observing, engaging in mimesis, and repeatedly practicing, a trainee acquires basic grasps, gestures and movement with the tools and an embodied understanding of assembly. By being audience to his master's negotiations and disputes with clients, suppliers, team members and other masons, he becomes more fully immersed in the concerns, worldview and social comportment of his mentor. In combination, his technical competence and business acumen forge the young man's identity as a recognised member of the masons' trade association, the *barey ton*. Notably, the dynamics of the master-apprentice relation compels older masons to assume a somewhat paternal, mentoring role. Mentoring incites realization and deeper understanding on the part of senior masons of their own skilled know-how and the degree of control that they exercise over the reproduction of the trade and, by consequence, Djenné's architectural heritage.

The apprentice's typically mundane duties of catching, stacking, and passing materials on to the mason integrate him with the mechanics of the labour force. Participating with the lower-level labourers serves to familiarise him with the physical properties, modes of preparing, and efficient handling of the mud bricks and plasters and the various kinds of timber used in ceiling construction. It also expands his understanding of the division of labour on a construction site, and coerces him to think and act as a team member. In these circumstances he learns to issue and receive directives; to temper his emotional displays of anger and frustration, and to earn respect from builders at all levels in the hierarchy. His aspirations to take part in actual masonry work are typically manifested in his attempts to independently lay courses of brickwork, and in doing so he carefully mimes the tool-wielding gestures and economic actions of his mentor.

Progressively, the mason permits his apprentice to build alongside him, correcting the young man's errors and instructing almost entirely by means of demonstration. Choice verbal cues direct the novice's attention to salient aspects of the mason's actions, and reprimands and a serious tone of voice draw boundaries around what is permissible. The crucial test arrives when the mason directs his apprentice to erect a flawless brick wall on his own. Repeated displays of his capacity to do so are rewarded with a new plumb bob. The presentation of this costly tool of the trade signals the apprentice's advancement and augments his status. He is not declared a "mason", however, until mastering other essential tasks such as setting level palm-wood lintels over windows and doorways, rendering wall surfaces and ceilings with evenly applied coats of fine, fermented mud plaster, and constructing heavy flat roofs with their angular geometries of quartered palm-trunk beams.

An apprentice's long, first-hand acquaintance with the restricted palette of tools and materials serves to inculcate a practical knowledge in him about the structural limits and possibilities of the massive, so-called "Sudanese-style"

mud architecture. His introduction to negotiations that take place between masons and clients concerning design and budget constraints, as well as his growing familiarity with the practices of other masons in the community, shape his aesthetic sensibilities and his judgement of quality, proportion, and composition. This combination of structural and aesthetic principles, together with an accretion of practical experience, enables masons to creatively expand the existing repertoire of built forms and decorations in a way that is deemed both traditional and contemporary by their colleagues and their patrons.

The competences of Djenné’s masons extend beyond merely configuring building plans, laying bricks, applying renderings of mud plaster, and sculpting decorative details. They are also versed, to varying degrees, in Qur’anic verses and what they refer to as “Black-African secrets” (*bai bibi*). Their cache of spells and benedictions guarantee safety for those working on site and for the wellbeing of the future occupants; or, conversely, incantations can bring harm to adversaries or cause their buildings to crumble. New building sites are exorcised of meddlesome *djinn* spirits and amulets and blessed objects are buried in house foundations to protect the structural integrity of the house. Benedictions, they say, are as important to making good buildings as the mortar between bricks. The masons frequently make a show of their daily blessing rituals by overtly performing them on site. But, they seldom reveal the secret content of their recitations – even to one another, and sometimes only partially to their apprentices. The spectacle of secret knowledge is a vital component in constructing and reproducing their “expertise” and professional status in the eyes of their fellow citizens.

Djenné’s “vernacular” and European Modernism

Djenné’s fantastic molten forms of towering mud and amorphous pinnacles, crowned by giant white ostrich eggs, have appealed to European architects and artists since the late-nineteenth century. Architect Labelle Prussin intimates that Auguste Perret’s early modernist innovations in reinforced concrete, Antonio Gaudi’s design for Barcelona’s church of the Sagrada Familia, and Le Corbusier’s design philosophy were inspired by Sudanese architecture (1994:110). It is likely that surrealist artists, too, would have been introduced to this exotic place through the writings of Michel Leiris and their sensibilities aroused by the “exotic” plasticity of the buildings.

Numerous modernist architects shared a reverence for vernacular architecture, believing that indigenous builders possessed an innate sensibility for balanced composition and proportion, and that their know-how was uncontaminated by Western artifice. This view was expressed by the so-called Master Builders of twentieth-century architecture – namely Le Corbusier, Mies van der Rohe, and Frank Lloyd Wright – all of whom paid homage to the supposedly “uncorrupted reason and instinct” of primitive man as builder (Rykwert,





1981:14-18). This Western reverence for what might be described as “primitive” or “organic” architecture in pre-industrial “traditional” societies can be traced back through a genealogy of Western philosophy with its origins in Jean-Jacques Rousseau’s noble savage (1762) and Abbé Marc-Antoine Laugier’s influential *Essai sur l’Architecture* (1753) with its frontispiece of the classical primitive hut.

The second half of the twentieth century witnessed a proliferation of studies and publications celebrating the beauty and genius of non-Western forms and styles that, historically, had been relegated outside the formal canon of architecture. Labelle Prussin argues that perhaps the most significant reason for the hitherto scholarly neglect of African architecture was the shared attitude by architects and laymen that “building in sub-Saharan Africa is not architecture at all, but at most, building technology” (1968:34). Prussin later added to her argument that “since no permanence, monumentality, authorship, building technologies, spatial articulation, or enclosure was visible to the Western eye”, the existence of an African architecture was denied (1986:21). Renowned housing theorist Paul Oliver noted that non-western building traditions were ignored not only by architects, but also by anthropologists who were more interested in other social concerns (1971:11).

Djenné and its celebrated mosque have featured in numerous publications devoted to what author Jean-Louis Bourgeois coined the “spectacular vernacular” (1983). In critically examining his own use of the term, Bourgeois noted that employing the term “vernacular” to describe monumental building traditions of the various non-Western regions of the world is inaccurate, and “will probably be looked back on as having been naïve” (ibid.:70). Nevertheless, publications on vernacular architecture continue to raise general awareness



about the diversity of local building types, and promote constructive discourse about the use and meaning of such terms as architecture, style, tradition, heritage, and authorship (see, for example, Asquith and Vellinga, 2005). Art historian Suzanne Preston Blier pays homage to Bernard Rudofsky's pioneering efforts in this domain of scholarship and notes that, as a result of his work, "most writers in the field now boldly identify the creators of these buildings as their architects" (2004:185).

Heritage under threat

For newcomers – including scholars, tourists, and those seeking alternative lifestyles – Djenné represents a place apart. Its meandering alleyways, asymmetrical public spaces, and individuated buildings seemingly deny the mundane regularity and homogeneity of the contemporary western city. The surfaces of Djenné's architecture are crafted by hand, and each house is shaped by its own unique history of intimate negotiations between inhabitants, masons, and the harsh environmental and climactic forces of the Sahel. Its proportions appear to satisfy Le Corbusier's manifesto that architecture be based upon the human body, and the building process ensures a direct engagement with raw materials and uncomplicated, human-powered technologies (2000 [1948]). Underlying the supposedly 'pre-rational' planning and forms of Djenné's buildings is a logic of structure and scale that appeals both intellectually and aesthetically.

Djenné, however, like all urban settlements, is incessantly confronted by social, cultural, and political change and by economic challenges that impact residents' livelihoods and lifestyles, and thereby alter the building fabric as well as the

meaning and value assigned to architectural heritage. I briefly mention only a few of these.

-Telecommunications, computers, and the Internet have lubricated the formation of new social, financial, political, and religious networks; and while Djenné's unique architecture becomes more widely known and appreciated around the globe through electronic media, foreign values, marketing forces, and alternative consumer choices now infiltrate Djenné at increasing velocity.

-A growing number of masons have strategically diversified their own "traditional" mud-brick practices by learning to build with concrete, breezeblocks, and steel reinforcing bars and to decorate with ceramic tiles, cement plasters, and commercial paints, which clients request.

-Changing attitudes among the resident population in favour of state education have drawn young men and women into new trades and careers. By enrolling their children in formal schooling rather than apprenticeships, parents, including masons, are complicit in the growing defection from the traditional crafts and trades.

-Climate change, recurring drought, and crop-destroying plagues of locusts wreak havoc on the local (and regional) economy, thereby impacting residents' ability to commission new building projects or to carry out costly annual maintenance works on their mud-brick homes.

-Arguably, the greatest menace to the upkeep and survival Djenné's historic buildings is the combination of a weak national government, political unrest in various regions, and an Islamist threat. These factors have led to increased poverty, annihilated the fledgling tourist trade, and stanching the flow international funding and technical assistance for repairing and preserving the town's architecture.

While new configurations of work, life, and urban space emerge in the twenty-first century, the people of Djenné continue to embrace their grand ritual of re-plastering the Mosque each year, and they value the skilled practices of the masons who organise that event and who build and maintain their homes. Individual masons have staked out authoritative positions within the political discourses of "authenticity" and heritage, and a small but growing number claim complete autonomy over the reproduction of their Sudanese-style architecture. For the time being, this reproduction continues to wed a technological know-how and conceptual ability for design with situated Islamic principles, benedictions, and secret incantations. In combination, these ways of knowing produce and reproduce the masons' distinct identity, as well as the living, changing character of Djenné.

In the current Smithsonian exhibition and accompanying documentary film, exploration of these themes is made, importantly, through the voices of the masons and documentation of their everyday practices.

For details of the exhibition, see <http://www.mnh.si.edu/exhibits/mud-masons/>. To watch the documentary film, *Masons of Djenné*, see <http://www.mnh.si.edu/exhibits/mud-masons/meet-mud-masons.html>.

REFERENCES

Asquith, Lindsay and Marcel Vellinga (eds.) 2005. *Vernacular Architecture in the Twenty-first Century: theory, education and practice*. London: Routledge.

Blier, Suzanne Preston 2004. 'Butabu: adobe architecture in West Africa', in J. Morris and S.P. Blier (eds.) *Butabu: adobe architecture of West Africa*. New York: Princeton Architectural Press. Pp. 185-216.

Bourgeois, Jean-Louis and Carolle Pelos 1983. *Spectacular Vernacular: a new appreciation of traditional desert architecture*. Salt Lake City: Peregrine Smith Books.

Le Corbusier (Charles-Édouard Jeanneret) 2000 [1948]. *The Modulor*. Basel: Birkhäuser.

Marchand, Trevor H.J. 2001. *Minaret Building and Apprenticeship in Yemen*. London: Curzon-Routledge.

_____. 2009. *The Masons of Djenné*. Bloomington, Indiana: Indiana University Press.

_____. 2015. 'The Djenné Mosque: world heritage and social renewal in a West African town', in *APT Bulletin, Journal of Preservation Technology*, 46(2-3):4-15.

Prussin, Labelle 1968. 'The Architecture of Islam in West Africa', In *African Arts* 1(2):32-35, 70-74.

_____. 1986. *Hatumere: Islamic design in West Africa*. Berkeley: University of California Press.

_____. 1994. 'Verité et Imaginaire de l'Architecture', in R. Bedaux and J.D. van der Waals (eds.) *Djenné: une ville millénaire au Mali*. Leiden and Gand: Rijksmuseum voor Volkenkunde and Martial. Pp. 102-111.

Rykwert, Joseph 1981. *On Adam's House in Paradise: the idea of the primitive hut in architectural history*. Boston: MIT Press.