

Team Members

Tyler S. Sprague, PE., Ph.D.

Tyler S. Sprague is an Assistant Professor of Architecture (adjunct Civil and Environmental Engineering) at the University of Washington, where he teaches courses in global architectural history and structural design. As both structural engineer and architectural historian, he studies the intersection of the two professions across many timescales, in global practice. His dissertation on the post-war architect Matthew Nowicki explored the first tension-hung roof in the United States as a product of the global postwar condition. He has published in the *International Journal of Construction History*, among others.

Vikramaditya Prakash, Ph.D.

Dr. Vikramāditya Prakāsh is an architect, an architectural historian and an urban theorist. He works on issues of postcolonial history and theory, modernism, global history, globalization and urbanization and preservation. His books include *Chandigarh's Le Corbusier: The Struggle for Modernity in Postcolonial India*, *A Global History of Architecture* (with Francis DK Ching & Mark Jarzombek), *Colonial Modernities: Building, Dwelling and Architecture in British India and Ceylon* (with Peter Scriver, co-eds), and *The Architecture of Shivdatt Sharma*. He is Series Editor of *Sustainable Design Solutions from the Pacific Northwest* and *Modernism in India*. *A Global History* is widely used as a textbook and being translated into five languages. He is currently working on *Deruralization: The Modernist City in the Age of Globalization* (Routledge: 2015).

Title, Theme, Goal:

Global History of Rock-cut or 'Chthonic' Architecture

We are proposing a series of 6 introductory lectures describing the characteristics and global history of so-called 'rock-cut' architecture, or the *subtractive* architecture that is embedded within a native geological mass. Such structures are found worldwide, in history and even today. As residences, churches, shrines, meditation spaces, civic structures and tombs – rock-cut architecture occupies a central place in many global civilizations. It even persists into the present day in forms such as subway systems, underground market spaces, and the occasional itinerant work of architecture. Our goal will be to produce a series of introductory lectures that enable teachers of architecture and art history to present this material in a conceptually rich and globally situated manner.

One of the key ways in which we will engage the global history of the rock-cut will be through the framework of structures. The space-shaping potential of the freestanding structural form is the hallmark of tectonic architecture – from the beams and columns of Greek temples to the flying buttresses of the Gothic Cathedrals. In 'rock-cut' architecture, the structure is deeply integrated with the

native earth, with structural properties that derive directly from the geology of the site and place. Construction is focused on material to be removed, not structure to be assembled. The native stone guides the gravity forces around the carved space, not to a ground plane below, but simply deeper into the earth – a resolution of forces that can never be precisely determined. This property will be emphasized to adduce discussions that are both philosophical and practical.

Context and Fit

‘Rock-cut architecture’ is best understood as a subset of a larger classification that can be described as earth-based or mass-based architecture (versus, say, space based or tectonic), which includes structures such as designed earthen mounds, landscape-scale patterns, and massive sculpted forms. We propose the hitherto unused term “Chthonic architecture” to describe such architectures. According to Wiki, Chthonic is a Greek word which means "in, under, or beneath the earth", literally "subterranean". It derives from the Greek *khthon*, one of many terms for "earth". *Khthon* refers to the interior of the soil, rather than the living surface of the land (as Gaia or Ge does) or the land as territory (as *khora* (χώρα) does). This term evokes a multiplicity of complex meanings - at once abundance and fertility, yet also the grave and death.

Chthonic architecture, in other words, provides insight into an alternate universe of architectural meaning, another kind of inhabitation, construction and structure. Unlike the space and roof making epistemologies of traditional architecture, chthonic architecture suggests the immeasurable and mysterious terrains of infinite mass. The chthonic forces conception of the mass of mountains, the deep mystery of birth, the infinite potential of death. In analytical psychology, the chthonic refers to the spirit of nature within – the unconscious, earthly impulses of the self.

As a strange other to ‘normal’ assembled, freestanding forms, chthonic architecture resides outside of traditional architectural history, and as such is largely ignored by global architectural history, or at best represented as a lesser manifestation - or copy - of the ‘true’ forms of architecture. This is understandable in part because the chthonic presents significant epistemological, conceptual challenges. Why did people make such architecture? What does it mean? Are they simply ‘real’ buildings just carved into solid rock? How were they made? How are the structural forces resolved? And so on.

And yet, chthonic architecture is present across global civilization. We find them in the from the earliest cave shelters and dolmens of the first civilizations, as the earth mother goddess shrines of sites such as those in Malta, and of course in the massive mass constructions of the Egyptian tombs, temples and pyramids. The rock-cut tombs and treasuries of West Asia, may have been the direct precedent for the first Buddhist and Jain *caityas* and *viharas* that from the 2nd century onwards gave birth to a full millennia of exploration in the rock-cut and the mass assembled (stupa).

From South Asia, the Buddhist carried their chthonic forms to Central Asia, and from there, along the Silk Routes, to China and onwards to Korea and Japan. In a different form, another Buddhist journey took the stupa form to Sri Lanka and South-east Asia, while, in the meanwhile in South Asia itself, Buddhist chthonic form were transformed into the great rock-cut caves and temples of later Hinduism from the 5th century onwards. This is when the 'battle' between the rock-cut and rock-assembled produced some of the finest constructions of South Asian temple architecture, such as those at Ajanta, Ellora, Aihole, Badami, Mamallapuram, and such.

And then, half a century later, as the chthonic waned in South Asia, massive churches were built in Ethiopia by Lalibela, almost 'miraculously' as if workers who knew how to build such structures might have showed up in Africa (from South Asia?)

The extent of the chthonic as a global architectural 'type' is vast - a fact that tends to be suppressed by the modern day preoccupation with the tectonic. This suggests that chthonic architecture may be one of the global architectural stories of our times. We propose to begin to tell this story.

In this module, we will focus just on the iconic and most directly 'rock-cut' forms of the chthonic: the 'caves'. In the future, these lectures could be usefully supplemented with additional modules on other chthonic forms such as platform mounds, pyramids, burial mounds, and such. Our lectures will be designed to begin to explain and trace the evolution of the chthonic in early history, which an occasional reference to the present. The material will be presented in a simple and direct manner, designed to be easily accessible to the undergraduate student and the unfamiliar (and possibly skeptical) instructor.

Our lectures will be designed such that they could be incorporated into architectural history survey courses in different ways. As a six-course module, these lectures could be presented in series within a traditional architectural history course. With a conceptual introduction (Lecture 1), lectures that outline a basic chronology of development (Lectures 2-5), and a concluding/extending lecture (Lecture 6), this module would be self-contained, and allow for comparison to other distinct modules within a semester or quarter-long course.

The lectures will also be somewhat self-sufficient so that individual lectures could potentially be extracted for specific topics. The lectures could be inserted into courses focused on particular regions or time periods.

More theoretical classes would benefit from the first and last lectures, as they systematically present the alternative to conventional histories, and then detail the overlapping of the two.

The lectures will take a broad, interdisciplinary approach, drawing on cultural and spiritual influences as well as material and technical. With focus on the surfaces of the carved spaces, many lectures will also be of interest to art history instructors. With focus on the structure and materials of these spaces, it is possible that geology students, and engineering students would find interest in this approach as well.

List of major buildings, sites, objects, etc.

Lecture 1: Theoretical Introduction to the Chthonic or 'Rock Cut' Architecture

This lecture would introduce the idea of rock-cut or chthonic architecture – that deriving from the earth, based on the use of mass – and how it is often difficult to address. Contrasting with the 'tectonic' definition by Frampton, the chthonic would be presented as an alternative view of architecture - allowing different lenses of interpretation. These would include: 1. Earth-as-mother (Roman mythology) and by extension earth-as-womb, with connections to psychology. 2. Earth-as-death, a place outside of the earthly realm where meditation/ worship/ transcendence can occur. 3. Earth-as-refuge, safety from bodily/ spiritual harm. 4. Earth-as-infinite mass, timeless mystery. From these perspectives, this lecture addresses key formal/ material characteristics of rock-cut architecture – including geological conditions, topography, in-situ structural form, shape and surface of interior spaces.

This lecture will also trace out the key chronology of the rock-cut, from first civilizations to the Churches of Lalibela, as outlined in the material above. Contemporary examples of the chthonic will be inserted to demonstrate their continued relevance.

Lecture 2: The Question of Death & Life: Egypt

This lecture will address early 'rock-cut' architecture, initiating earlier but flowering during the Egyptian period (2000-1000 BCE)

Themes: 1. Discuss tombs in native soil and tombs in created or formed earth, in a comparison of actual ground and idealized 'ground'. 2. Describe spaces as intended to be occupied by the dead, tombs as "homes for the dead", ie. the dead "live there" in the afterlife. 3. Demonstrate how tombs are intended to be ETERNAL works, ie. in earth, there is eternity, true permanence

Case Studies: Hypogeum (Malta), Abu Simbel, Queen Hapsepsut's Funerary Monument, Valley of the Kings/Queens (Egypt), Cave Tombs of Cyprus

Lecture 3: Living within the Earth: Lycia, Persia, Petra

Out of Egypt, rock cut forms maintain certain characteristics, but become more of a civic presence within communities.

Themes: 1. Places of security/ safety, freedom from persecution. 2. Functioning of a city within the ground 3. Comparison with Hellenistic architecture

Case Studies: Lycian Tombs (Turkey), Tomb of Darius, Naqsh-e Rostam (Persia), Petra (Jordan), Esgüyük monastery (Turkey), Chapel Goreme (Turkey), Thamud (Saudi Arabia),

Lecture 4: The Battle Between the Rock-Cut and the Free-Standing: South Asia
Into South Asia, rock-cut forms are adopted for Buddhist caityas & viharas along trade routes and come into dialogue with free-standing Hindu temples.

Themes: 1. Places of security/ safety, freedom from persecution. 2. Places that arose from cooperation between travellers and merchants. 3. Places of total sculptural freedom, every surface detailed

Case Studies: Lomas Rsi, Ajanta Caves (India), Elephanta Caves (India), Dambulla Cave (Sri Lanka), Five Rathas (India), Ellora Temple (India),

Lecture 5: A 'Rock-Cut' Silk Road: China

Travel of Buddhist monks into China took rock-cut architecture into China

Themes: 1. Places of sensory deprivation that assist in quest towards nirvana/ peace/ understanding. 2. Ritual engagement with the earth

Case Studies: Magao Caves (China), Bamiyan Caves (Afghanistan), Dunhuang (China)

Lecture 6: Carving Christian Churches: Africa, and Modern Examples

The unexpected appearance of rock-cut in other places.

Themes: 1. Sharing craft across the Arabian Sea, 2. Re-engaging/adapting forms of Christianity & connecting to Jerusalem. 3. Chthonic character of Africa 4. Contemporary chthonic architecture, conceptions/ representations of an excavated architecture.

Case Studies: Tomb of Absalom (Jerusalem), Lalibela – 11 rock-cut churches (Ethiopia)

Truffe House (France), Husain-Doshi Gufa (India), Chandigarh High Court (India), Zumthor's Thermal Baths Vals (Switzerland), Toronto & Montreal underground networks, NY subway, mines

Process

Work will progress primarily at the University of Washington, Seattle, with direct collaboration between Professors Sprague and Prakash taking place during the summer 2015. In anticipation of further work developing lectures for GAHTC on 'chthonic' architecture, a travel stipend is included in the budget for documentation of sites in North and South America.

Timeline

Delivery of lectures is anticipated in December 2015.

Budget

Honoraria of \$1000/ lecture		\$6000
Travel	2 x \$2000 =	\$4000
<u>Total</u>		<u>\$10,000</u>