CENTER OF GRAVITY FOUNDATION HALL

Predock_Frane Architects
Jemez Springs, New Mexico
Web

FIRM BRIEF [1]

In 2000, Hadrian Predock and John Frane established Predock_Frane Architects in Santa Monica, California as a collaborative research and development design studio. They offered a collaborative working relationship with prospective clients that aimed to elicit deep thinking about design problems and to produce atmospheric architecture. Initial explorations with clients included a significant effort to explore ideas outside of the conventional boundaries.

The architecture of Predock_Frane ranged from small scale art projects to infrastructure and large public venues. Their research driven work sought to extract and transfer non-disciplinary logic into the architectural terrain, while encouraging site and context to become active and vital agents in shaping material and spatial development. The partners sought out the challenge of building rich atmospheres out of limited and constrained material sets, thus their work had a strong multi-sensory and experiential bias. Sustainable thinking had also been a driving force in Predock_Frane's design practice since its inception; a thorough integration of intelligent environmental strategies underpinned all of their work.

Predock and Frane won many awards, lectured widely, and presented or exhibited at venues around the world including the 2012 Venice Biennale and the 2006 Cooper Hewitt Design Triennial. Both partners have also taught extensively, including appointments at the University of California-Los Angles (UCLA), the University of Southern California (USC), Tulane, and Berkeley in the United States.

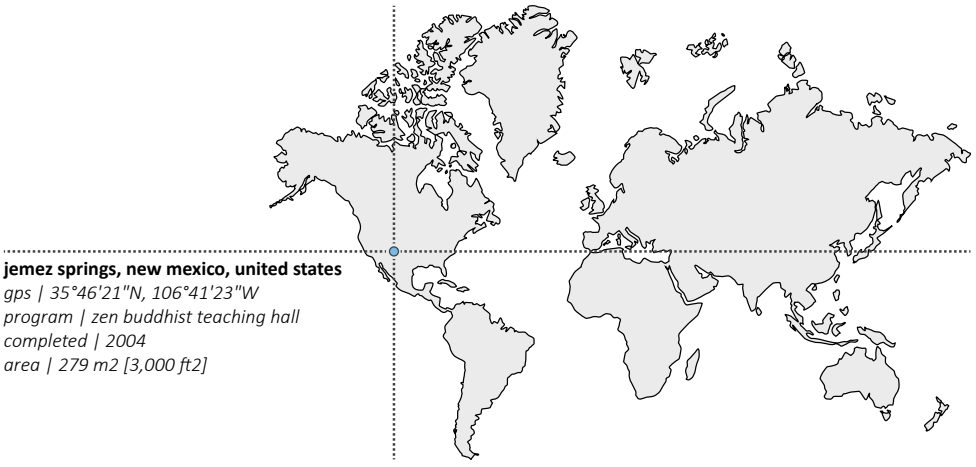
In 2015, the firm was amicably disbanded by the partners in order for them to pursue independent interests. Predock is currently serving as the Director of Undergraduate Programs at the USC School of Architecture while Frane is a Design Director in the Los Angeles office of HGA.

PROJECT BRIEF

> *Dawn is breaking. A glow, and then direct sun, hit the westerly flank of the canyon, giving acid life to its cliffs of travertine and ruddy sandstone. The fast-brightening daylight translates into another glow inside the hall, in part from its glass clerestory and open front door, but mostly for the full-height polycarbonate walls on laminated-strand lumber enclosing its western half… A sweet incense burns on the altar.*[2]

The Center of Gravity Foundation Hall is the main teaching and meditation space for the Bodhi Mandala Zen Center, located in a mountain river valley in northern New Mexico. The building is one in a series of structures that house the Zen Center. Unlike the Foundation Hall, many of the other

Fig 1 | *Location Map*



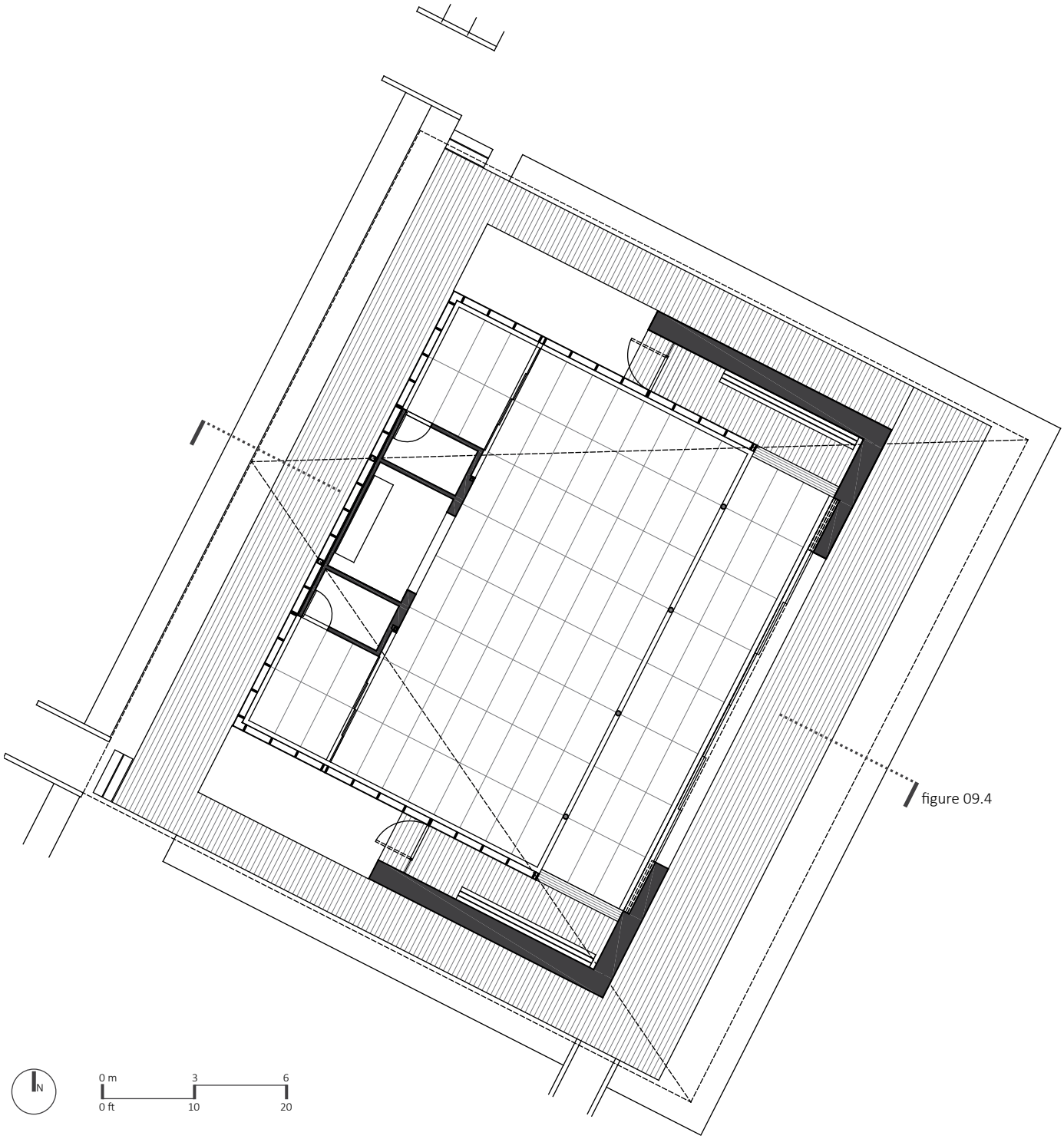


Fig 2 | *Floor Plan © Predock_Frane*

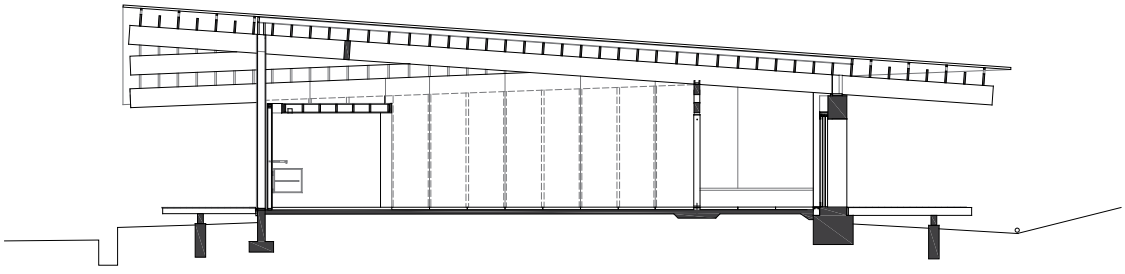


Fig 3 | *Building Section*
© Predock Frane

Fig 4 | *Foundation Hall from the entry path. © Predock_Frane*

buildings on the campus have graced the site for some time including a century-old church. Predock_Frane designed their addition to the campus to reflect the character of these sentinels, which have watched over this corner of the lush valley as it has evolved.

The Foundation Hall is a study in duality. It is composed of two boxes that cradle the meditation space within. The first box is composed of rammed earth, while the second box, which slips inside the first, is wood light frame construction clad with polycarbonate sheets. Carved out of the rammed earth box is a large southeast facing opening. A series of sliding wood panels sit in this 11 meter [36 foot] wide opening, allowing the space to open to the garden beyond. Perched on top of the pair of wall systems is a folded metal roof supported by a wood structure. The extensive roof, which floats out beyond the walls of the building, is designed to capture rainwater, which is used to irrigate the surrounding gardens.

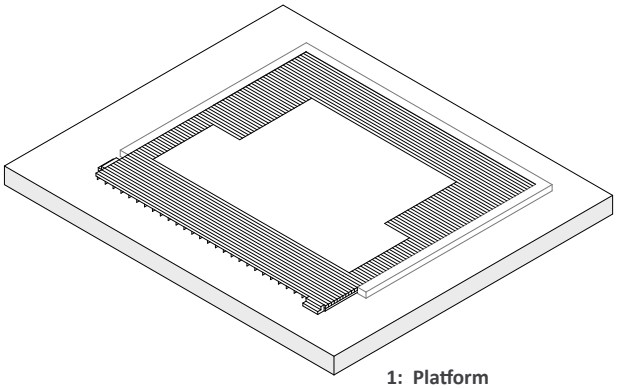
Programmatically, the space is used first and foremost for the teaching of Zen Buddhism. The Roshi enters from the east and sits facing the Buddha located in the Hall's budsudon to the west. The monks and students in training sit on tatami mats which line the floor of the space. The monks occupy the north side of the space, while students occupy the south side.[3] In addition to training, the Foundation Hall is used for weddings, funerals, and other ceremonies for both Buddhist and non-Buddhist faiths.

TECTONIC PRINCIPLES

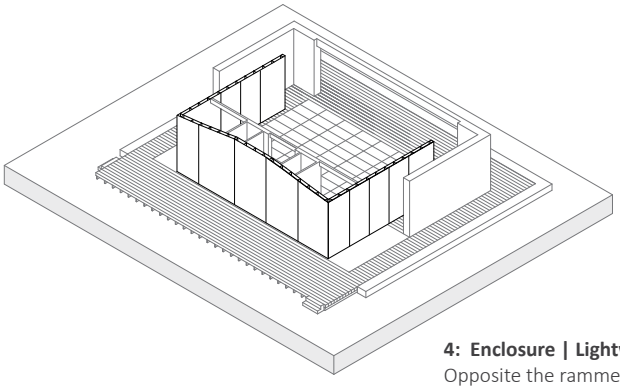
ANATOMY

The Foundation Hall's earthwork is composed of two parts: a concrete slab, which is only exposed outside the two main entrances to the hall, and the rammed earth wall that forms the east side of the structure's enclosure. These elements are contrasted by the U-shaped wood light frame wall system that slips inside its rammed earth counterpart. The framework and earthwork perform a balancing act and define the interior space. The framework is clad with polycarbonate sheets on both the inside and outside of the building, while the large opening cut into the east wall is filled with an operable screen composed of wood and glass. The building is capped by a gracefully sloping roof. It is framed in wood, clad in corrugated metal, and supported by steel columns that are hidden inside the walls.

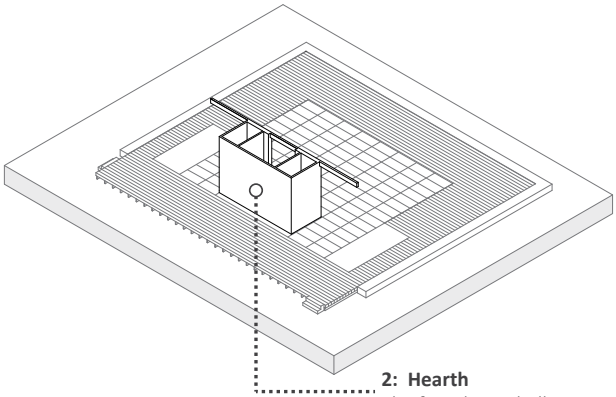
On the west wall of the building, a dark-stained wood enclosure serves as the Hall's butsudan. It is sheltered by the roof and the two wall systems – heavy and light, die Mauer and die Wand – and is the principle hearth of the building. At a larger scale, though, the entire enclosed volume also serves as the social and spiritual center of the Bodhi Mandala Zen Center.



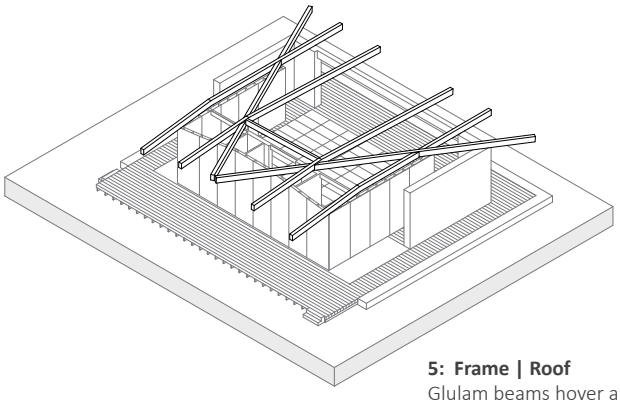
1: Platform
The building sits on a concrete pad, surrounded by a wooden deck on all sides that floats above the landscape.



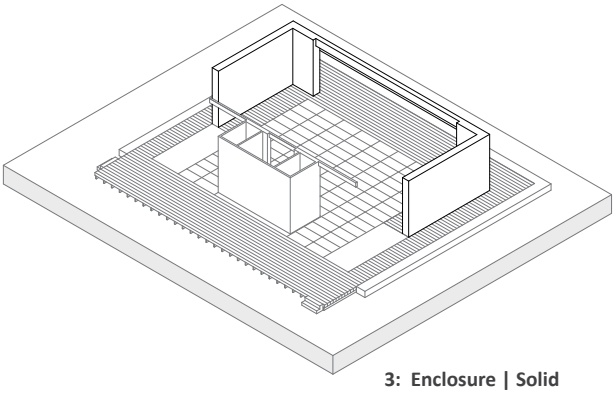
4: Enclosure | Lightweight
Opposite the rammed earth, a lightweight enclosure of wood and polycarbonate wraps the west side of the building.



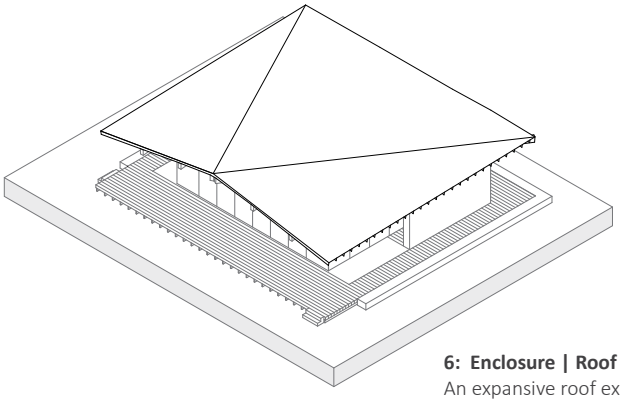
2: Hearth
The foundation hall centers on the butsudan. Additionally, the flooring of the ceremonial space consists of traditional tatami mats.



5: Frame | Roof
Glulam beams hover above the space, supported by the rammed earth and steel columns hidden in the polycarbonate walls.



3: Enclosure | Solid
The east side of the building is wrapped with a heavy, rammed earth wall. A large opening in the wall allows for a connection to the landscape.



6: Enclosure | Roof
An expansive roof extends out over the surrounding deck, floating above the building and sheltering the sacred space.

Fig 5 | *Building Anatomy*

TECTONIC

The first tectonic component of the Foundation Hall is the timberstrand framed enclosure that Predock describes as "a layered, component based system of sticks (wood framing), surface/envelope (polycarbonate), and fasteners."[4] The multilayered construction of the system allows the air pocket trapped between the polycarbonate skins to provide insulation for the space. This west facing wall glows throughout the day allowing the space to be filled with ambient light that serves as the primary illumination for the space. In the late afternoon, the setting sun bathes the space in the rich, warm

colors of the sunset while at night the reverse occurs and the building, now lit from the interior, becomes a lantern that lights the walks between the collection of buildings on the property. The construction allows for "a sense of lightness, translucency, and a plasticity of light."[5]

The second tectonic system is the roof, composed of a glulam timber structure, recycled 2x12 roof joists, and a corrugated metal roofing system. The roof floats above the enclosing wall systems, supported by hidden steel structure embedded in the walls. On the exterior, a third system – a wood deck surrounding the project – is elevated slightly above the surrounding landscape, detaching the Foundation Hall from the groundplane.

STEREOTOMIC

As opposed to the deck, the rammed earth walls provide an anchor for the Foundation Hall. These walls cradle the east side of the building and were built with materials taken from excavations at a local construction site. Predock describes the walls, however, as "more monolithic than stereotomic," believing them to be characterized by a "stratified monolithicity."[6] This phrase accurately describes the process of making rammed earth through the piling and packing of layers of material, while also illustrating the final product of that process: a single, uniform construction.

The rammed earth walls vary between 460 and 660 millimeters [18 and 26 inches] thick. This thickness allows the earthen walls to act as thermal masses, helping to passively heat the space in the cool months and keep the space cooler in the warmer months. In the high altitude of this region of New Mexico, the diurnal temperature swing is substantial and the rammed earth walls help to balance the internal temperature of the space.

INTERSECTION

Although not directly connected, the tectonic and stereotomic wall systems of the Foundation Hall meet at the two entries to the building. As you transition from the outside to the inside of the building (and vice versa), you slip between these overlapping layers. This moment is a significant threshold for the project and serves as what Frascari would call a "formal joint" or spatial intersection. From the outside, you walk along the deck next to the smooth polycarbonate wall. The first transition is in the flooring, which shifts from wood to a finished concrete slab. You then slip between the polycarbonate and rammed earth walls, eventually stepping through the door. Once inside, your feet are again on wood, but your body is still positioned between the two walls. A bench emerges, attached to the rammed earth wall, which allows you to sit and remove and store your footwear. Finally, prior to entering the main hall, the polycarbonate wall

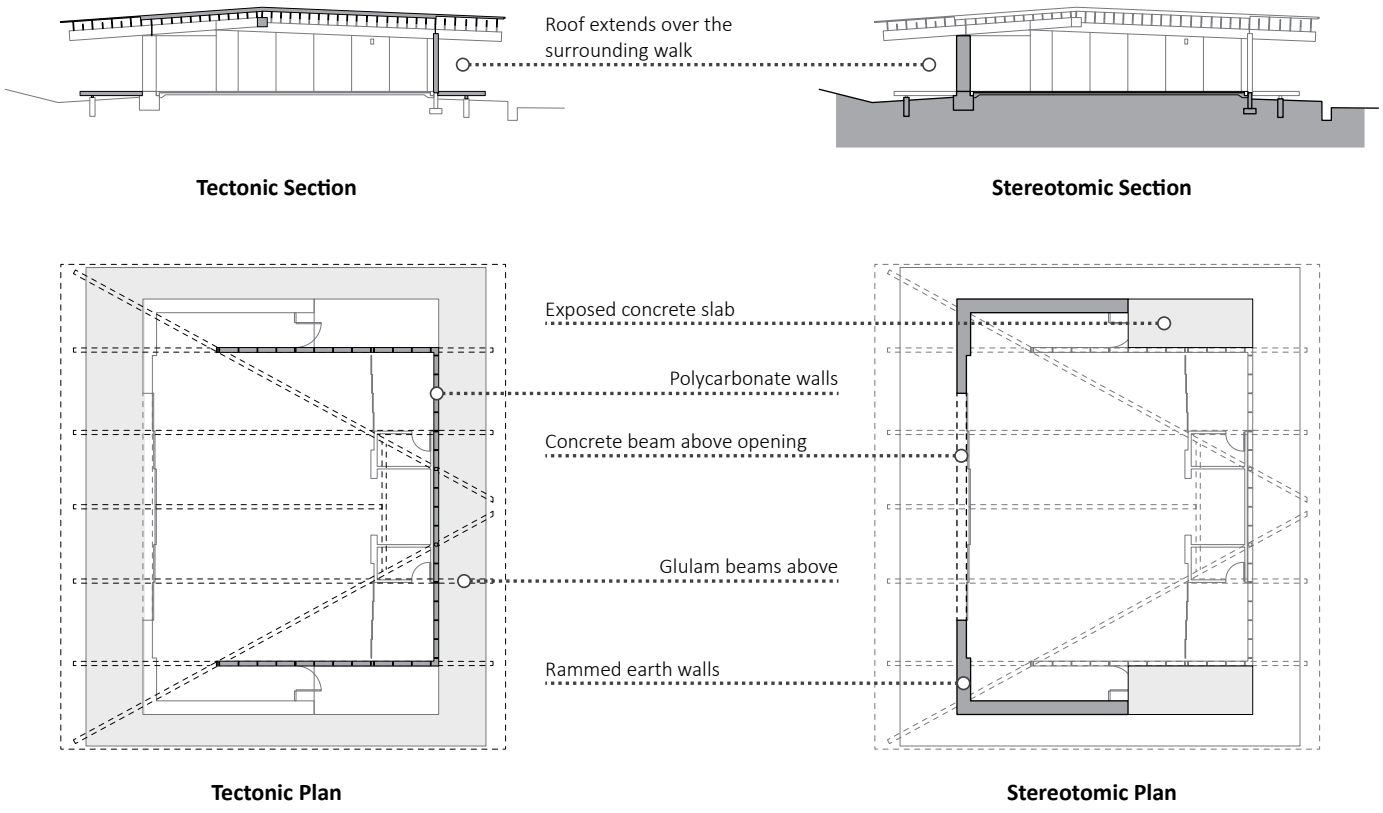


Fig 6 | *Tectonic vs. Stereotomic*

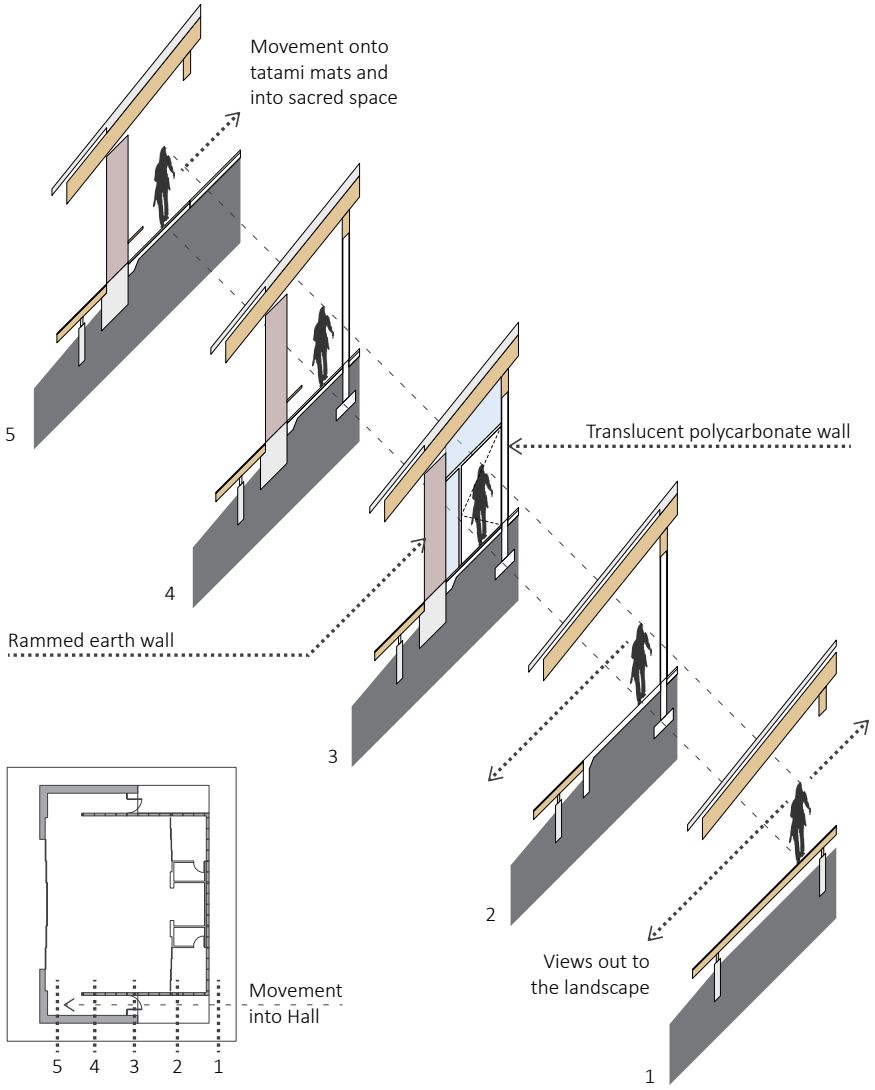


Fig 7 | *Entry Sequence*

stops and the space opens opposite the rammed earth enclosure into the Hall. This journey is brief, but meaningful both spiritually and experientially and is driven by the material makeup of the space.

PRECEDENT

The most critical precedent for the Center of Gravity Foundation Hall was historic Zen Buddhist architecture. Predock_Frane examined "the antecedent temple projects in Kyoto – such as Ryoan-Ji,"[7] (35°2'4"N, 135°43'6"E) from which the lineage of the Zen Buddhism practiced by their client originated. Through this study, the Foundation Hall's orientation was aligned based on spiritual need and the system of entry was derived from formal systems traditionally used in many Japanese Zen temples.[8] There are also other links to Japanese architecture embedded in the Hall, including the polycarbonate panels that are reminiscent of traditional Japanese rice-paper screens and the exposed roof structure that is reflective of historic temple construction. The project is distinctly contemporary however, and although "the project emerges out of a several thousand year lineage of Japanese Rinzai-Ji Zen practice," it is "one of a handful of projects that attempts to establish new modes of identity for the architecture of Zen practice."[9]

SPACE

According to the Predock, when the client approached Predock_Frane to discuss the project, their desire was to explain the rituals that would take place in the building and for the firm to design a space to frame the rituals.[10] This approach to spatial design parallels Bötticher's ideas of the user and the culture of place determining the plan, and in turn, the construction of space. Space here is defined by ritual, not the other way around.

In the Center of Gravity Foundation Hall, there is a module that guides much of the primary construction. The spacing of the timberstrand frame wall, the polycarbonate panels,

and the roof purlins is based on a 0.91 meter [3 foot] module. This dimension is driven by the tatami mat flooring of the main hall. Tatami mats vary in size (including 0.91 by 1.82 meters) based on the region of Japan in which they are made, but are always a 2:1 ratio in proportion. Historically, the mats were organized based on a defined set of rules or principles drawn from how the room was to be organized and used by the inhabitants. The use of woven mats for organization also weighs heavily in Semper's understanding of fabric's role in the defining of space. In the Foundation Hall, however, the fabric is not hung to separate space, but is instead laid out in a specific pattern on the floor to clearly define ritual and its spatial relationships in the Hall.

PLACE

Although not heavily drawn from its immediate context, the Center of Gravity Foundation Hall ties "the daily ritual of the natural world – the rising and setting of the sun – to the rituals of transcendence."[11] The morning sun rises and shines through the wood slatted screen mounted in the opening in the rammed earth wall. The screen is embedded with vertical strips of plate glass that are mounted on edge. These glass elements catch the morning light and refract beams through the space. While this lighting quality defines the eastern edge of the building, the western facade is defined by the changing color of the glow of light through the polycarbonate wall. The space is inwardly focused, a space for spiritual contemplation, but is still connected to the surrounding environment as it morphs dramatically throughout the day as the sun moves from east to west.

DETAIL | ATECTONIC

Predock cites one particularly critical detail in the design and construction of the Foundation Hall: the effect of the floating roof. This "magician's trick" is actually achieved through a series of moves. First, the significant extension of the roof plane; second, the concealing of the steel supports inside the polycarbonate wall; and third, the filling of the gap between the roof and walls with glass.[12] This last component is particularly important. The glass is fixed on top of the walls and then sealed to the roof components using structural silicone for an invisible joint. The effect is a strong continuity from interior to exterior above the building's walls that perceptibly "lifts" the roof off of its supports. Predock states that an effect is created that you may, at first, not notice, but eventually you will start to wonder why the space feels the way it does.[13]

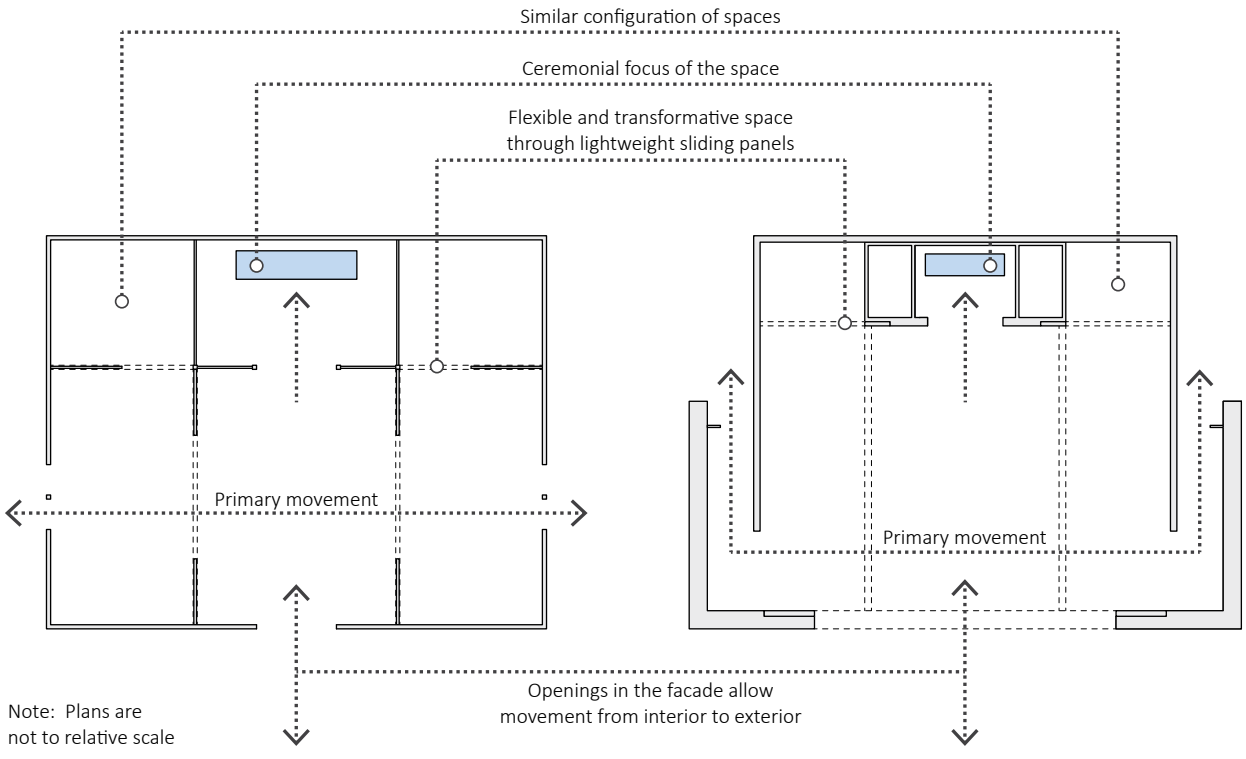


Fig 8 | *Temple Comparison*

ADDITIONAL RESOURCES

PROJECTS

Family Room for the J Paul Getty Museum, Los Angeles, California, United States, 2003 (34°4'39"N, 118°28'28"W)

Acqua Alta, Venice Biennale, Venice, Italy, 2004 (temporary installation)

Twin Houses, Pacific Palisades, California, United States, 2008

Habitat 15, Hollywood, California, United States, 2009 (34°5'42"N, 118°20'41"W)

Venice House, Venice, California, United States, 2012

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"Materiales para lo Contidiano = Materials for the Everyday." 2004. A+t (23):114-157.

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Sullivan, C. C. 2004. "Dharmic Dawn." Architecture 93 (10):46-51.

NOTES

1 This firm brief is a modified version of the firm profile found on Predock_Frane's website: http://predockfrane.wordpress.com/category/profile/

2 C. C. Sullivan, "Dharmic Dawn," Architecture 93, no. 10 (2004): 48.

3 Michael J. Crosbie, Houses of God: Religious Architecture for a New Millennium (Australia: Images Publishing Group, 2006), 74.

4 Information provided by Hadrian Predock through a digital interview, September 2014.

5 ibid.

6 ibid.

7 ibid.

8 ibid.

9 ibid.

10 Sullivan, "Dharmic Dawn," 48.

11 ibid., 45.

12 Hadrian Predock, digital interview.

13 ibid.

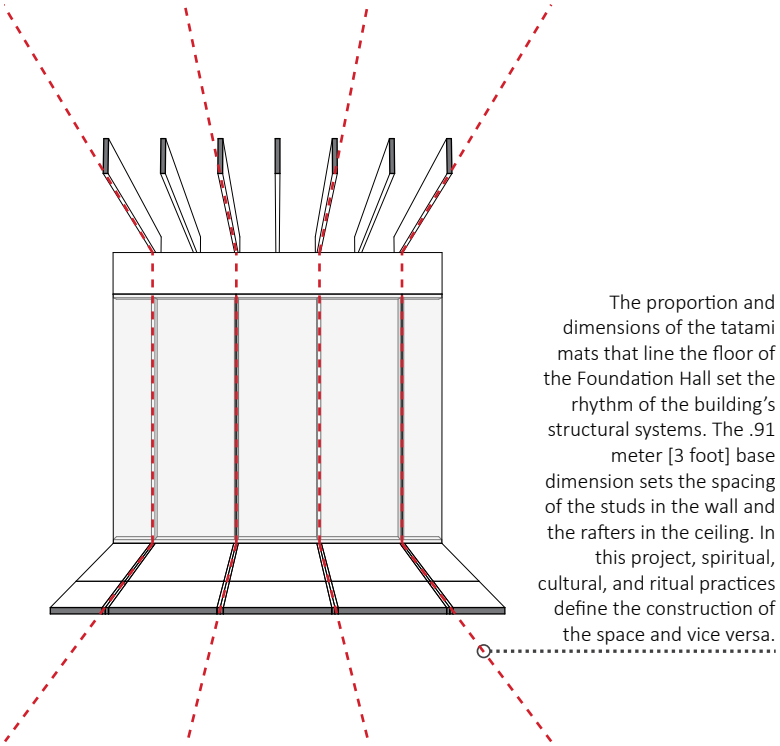

Fig 9 | *Tatami module*

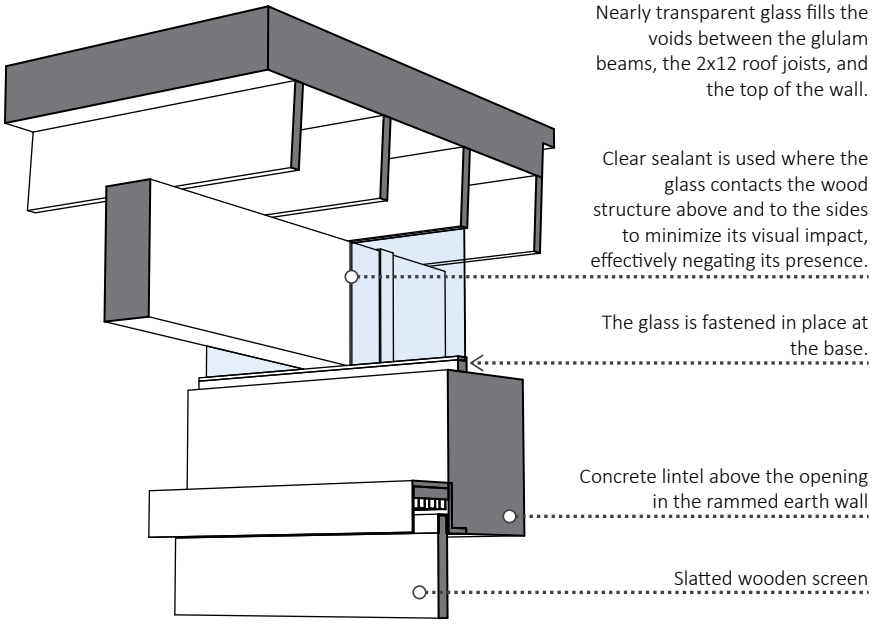

Fig 10 | *Detail of floating condition at roofline*