Archipelago Construct:The Matter of Polynesia

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"… we are beginning to recover a certain philosophical respect for the inherent morphogenetic potential of all materials. And we may now be in a position to think about the origin of form and structure, not as something imposed from the outside on an inert matter, not as a hierarchical command from above as in an assembly line, but as something that may come from within the materials, a form that we tease out of those materials as we allow them to have their say in the structures we create."
Manuel De Landa, *Uniformity and Variability: An Essay in the Philosophy of Matter.*

In his essay *Hyper-locality: On the Archaeology of the Here and Now In the Architecture of R&Sie*, Andreas Ruby identifies the history of Modernism as a progressive dissolution of place. The dogma of Modernism, he states, developed an architecture "emancipated from the circumstances of its concrete physical surroundings." Postmodernism, Ruby continues, refers to an idealized past, and buries place under layers of pseudo-historic projections. He describes the work of the architecture firm R&Sie as replacing "the idealistic abstraction of history with a materialist concretion of the present and invoking a new site specificity of the territory" through their technique of using indigenous materials.

Ruby identifies four types of place-defining design methodologies employed by R&Sie all of which use materials as their raison d'être. Two of these are particularly relevant to an investigation of non-western architecture: "I. Genius Materiae: the information of architecture by the material of its place" and "IV. Materialising Process: the spatialisation of local cultural practices."

This paper describes a proposal for a course that interrogates a particular non-western culture and mines it through its matter in order to enrich the current architectural academic and professional discourse by bringing place to the fore. Specifically, this studio seeks to investigate the matter of Polynesia in order to initiate and develop a lexicon that will lead to the design of a virtual museum and reconsider the conventional (Western) idea of the building enclosure. The studio methodology – a paranoid investigation into the substance from which architecture is made – is intended to act alchemically to dissolve the boundaries of 'otherness'.

THE STUDIO

Archipelago Construct is a proposal for a transdisciplinary studio undertaking the design for a museum of the Society Islands in Polynesia. The design of the museum will take two forms: virtual and physical. The physical museum is located on Huahine in French Polynesia. Intensive research into the *matter* of Polynesia will result in a nascent virtual museum collection. The *matter* will, it is hoped, allow a translation of cultural knowledge into fresh ideas about building enclosure.

The building envelope, or skin, is traditionally defined as the layer that separates the interior of a building from its exterior environment. In a location with a climate as temperate as that in Polynesia, and with a building tradition radically divergent from the western notion of architecture, the static concepts of enclosure, threshold, boundary and separation must be discarded in favor of ideas of fluid continuities and dynamic lines of demar-

cation. The traditional Tahitian concept of transitory habitat is largely derived from this tropical environment, one that causes structures, even the traditional stone *marae* (open-air sacred places), to rapidly decompose, and suggests a temporary, possibly even dissolving architecture.

The first half of the course is spent in Tahiti and Huahine. The second half of the course is spent in Los Angeles. A sequence of assignments - field work, research (archaeological, anthropological, sociological, environmental, architectural), mapping exercises, interviews, drawings and design work, both virtual and physical - allows each student to develop specific skill sets of observation, transformation and synthesis.
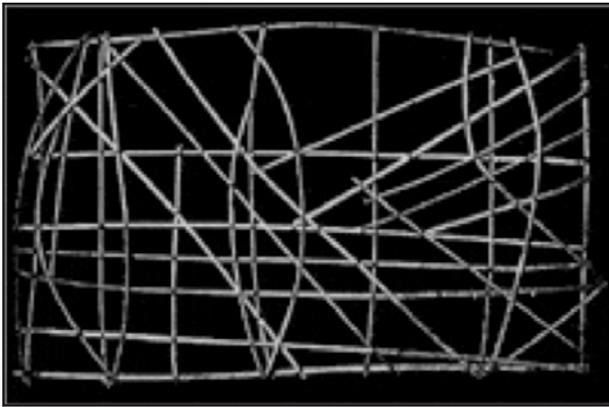

Figure 1: Polynesian navigational map

THE MATTER

> *"Through most of history, matter has been a concern of metaphysics more than physics, and materials of neither. Classical physics at its best turned matter into mass, while chemistry discovered the atom and lost interest in properties...[In both metaphysical speculation and scientific research] sensitivity to the wonderful diversity of real materials was lost, at first because philosophical thought despised the senses, later because the . . . the new science could only deal with one thing at a time. It was atomistic, or at least, simplistic, in its very essence."*
> Cyril Stanley Smith*, Matter versus Materials: A Historical View.*
>
> *"For instance, Aristotle's famous four elements, fire, earth, water and air, may be said to reflect a sensual awareness of what today we know as energy and the three main states of aggregation of matter, the solid, liquid and gas states."*
> Manuel De Landa*, Uniformity and Variability: An Essay in the Philosophy of Matter.*

The course begins by undertaking a series of related investigative exercises based on the assumption that materials carry implications of potential form, function, meaning, program and appropriation. We intend to focus on materials associated with the Pacific Islands, not typically included in the architectural lexicon, assess them from both non-western and western perspectives, and thereby open up design possibilities and broaden our architectural discourse.

Only materials indigenous to the island of Huahine will be investigated. These might include coral, wood, *tapa* cloth (tree bark), shells, coconut leaves, bamboo, stones, whale and fish bones, as well as linguistic materials, wind, and water …

A methodological research of the properties, characteristics, and distinctive features of the selected materials will follow. Operating under the assumption that each material is laden with implications of memory, emotional response and visceral reactions, (as well as clichés, stereotypes, and preconceptions), each team will develop a narrative for each material through the inextricable link between the mnemonic and the temporal, the western and the non-western, the historical and the contemporary. The assembled entries will produce an apocryphal encyclopedia, with descriptions and definitions of each material using written text, illustrations, contextual photographs, and analytical drawings.

The virtual museum will begin as an assemblage of the materials investigated. The course will take place over a number of years and each successive course will build upon the research and lexical entries of the previous year.

Each material entry will include the following information:
- Discernment – material selection
- Definition – definition of the material in written form, including a listing of its specific properties, and elusive qualities. These include qualities such as texture, touch, smell, sound, color, taste, strength, acoustics, as well as mnemonics, narratives, myths, and other associations.
- Example – illustrations using pictures, diagrams and descriptions that describe the material in its prototypical application.

- Context – images showing the material in a variety of situations, configurations, artifacts and documentation of how the context affects the understanding or (re)definition of the material.
- (Abstraction) Illustration – plan, section, elevation, details, perspectives and narratives of the material, including representation of the qualities of the material.
- Tectonic potential – design representations indicating multiple ways that the material can be used to form, organize, and structure space and enclosure.

Each material has the potential of providing both a source of the narrative or program of the studio project, and for the physical embodiment of a building. Particular attention will be given to craft and material transformation.

As Manuel De Landa points out in his essay, *Uniformity and Variability*, "the deskilling of craftsmen that accompanied mechanization may be seen as involving a loss of … knowledge, since in many cases empirical know-how is stored in the form of skills". The narratives and skills required to transform the material are necessarily an intrinsic part of each lexical entry and will begin to suggest associated construction techniques and morphologies.

THE COLLECTION

> *This book first arose out of a passage in Borges, out of the laughter that shattered, as I read the passage, all the familiar landmarks of my thought – our thought, the thought that bears the stamp of our age and our geography – breaking up all the ordered surfaces and all the planes with which we are accustomed to tame the wild profusion of existing things, and continuing long afterwards to disturb and threaten with collapse our age-old distinction between the Same and the Other. This passage quotes a 'certain Chinese encylcopaedia' in which it is written that 'animals are divided into: (a) belonging to the Emperor, (b) embalmed, (c) tame, (d) sucking pigs, (e) sirens, (f) fabulous, (g) stray dogs, (h) included in the present classification, (i) frenzied, (j) innumerable, (k) drawn with a very fine camelhair brush, (l) et cetera, (m) having just broken the water pitcher, (n) that from a long way off look like flies'. In the wonderment of this taxonomy, the thing we apprehend in one great leap, the thing that, by means of the fable, is demonstrated as the exotic charm of another system of thought, is the limitation of our own, the stark impossibility of thinking* that*. Michel Foucault*, The Order of Things

The design of the physical Museum of the Society Islands is the program driver by which questions regarding material transformation and enclosure are raised and tested. In the seminar portion of the course which runs parallel to the design studio, students begin by developing a philosophical foundation for the notions of 'museum' and 'curator,' and mounting an online exhibit as a means of collecting and displaying their research. The object of this activity is, in part, to create among the island's visitors a respect for the island as well as an understanding of how they participate in its life. In the end, the design process will help to answer questions about what is ultimately being collected, displayed, protected and enclosed, why and how.

The student teams confront a number of curatorial challenges:
- How do we organize a culture and give it a visible form?
- How do we represent the Polynesian identity?
- What is being collected?
- What is a museum?
- What is a virtual museum?
- How can a museum be made physically and culturally sustainable?
- Can a museum keep the social systems of a community alive?
- How do the pieces of the 'collection', in whatever virtual or physical form they take, create a unified whole?
- Given the open nature of what is being 'collected', how is the boundary of that set defined?

The virtual museum is a learning tool for students, which also serves as a site for information and interactive experiences for the interested public. By beginning with the virtual design, the studio proposes to create the concept first and reveal the building after the curatorial philosophy has been determined and designed. In other words, the software precedes the hardware; the system precedes the structure. However, the physical should not simply replicate the virtual. The two systems will be designed to co-exist with one another: the outreach potential of the virtual collection is combined with, and enhances the exigencies and environmental challenges of, the physical envelope. The curatorial research will require students to develop new approaches, fluid conditions, unique material and tectonic systems, types of boundaries, and environmental strategies, far removed

from the hermetically sealed enclosure of the traditional museum.

THE MUSEUM

> ***de·tail*** *- [French détail, from Old French detail, a piece cut off, from detaillir, to cut up : de-, de- + tailler, taillier, to cut; see* **tailor**.*]*
>
> *Materials are the ultimate outwardly expression of an architectural idea or concept. They render transparent the thought that gave rise to the edifice's existence. Materials carry the burden, literally and figuratively, of the building's raison d'etre. A composition of materials implies, indicates, infers, and proves the rule, the determination or the lack of consideration behind a particular architectural problem*. Wilfried Wang

The method of material transformation, both historical and contemporary, suggests ways in which the material can be manipulated. The program of the museum appears straightforward: the artifacts must be collected, stored, displayed and protected. The types of artifacts emerging from the material lexicon, it is hoped, suggest unconventional ways of aggregating material components, which in turn, produce unique morphologies.

In the spirit of sixteenth-century alchemists who, as De Landa points out, 'recovered a certain respect for a direct interaction with matter and energy' in an attempt to capture 'the complexity of physical transmutations and of the effect of physical structure on the complex properties of matter', the design of the enclosure(s) will require rigorous adherence to performance and efficiency. Design solutions which foreground a respect for the scarcity of resources on the island, as well as performative efficiency in terms of material and energy usage are encouraged. The methodology of interrogating the material first in order to develop a design, produces learning outcomes central to the curriculum: analysis and synthesis of research, materials and methods, construction techniques, human comfort, environmental performance. The methodology and in particular the emphasis on a non-western culture in the studio project, allows for a freedom from preconceptions about particular design approaches. The methodology also encourages a rigorous application of efficiency and performance, and skills developed earlier in the curriculum such as digital fabrication, scripting, and optimization

tools, applied to a condition made more essential by its unique location.

(HYPER-)LOCALITY

> *The life of the land is the life of the people.*
> Tahitian proverb
>
> *What strikes me is the fact that in our society, art has become something which is only related to objects, and not to individuals, or to life.*
> Michel Foucault

The project site is located on the island of Huahine. This 75-square kilometer island has a population of approximately 5700. It is home to one of the largest and best maintained *marae* (traditional temple) complexes in the country. The primary languages on the island are Tahitian, French and, increasingly, English. A significant portion of the field study requires students to penetrate deep into the community, visiting homes and interviewing residents.

One measure of the success of the design proposals will be how well they meet stringent criteria for environmental and cultural sustainability. Resources on the islands are limited and the climate particularly appropriate for design solutions that address issues of performance and efficiency of material and energy usage.

From Tahiti, the students travel to Los Angeles, a city with a population greater than 4,065,000 and located in the second largest metropolitan area of the United States, home to more than 17,775,000 people. This radical shift in scale is deliberately staged in order to heighten awareness of territory and context, and in particular to 'eliminate notions of progress or unilineal development,' as De Landa seeks to do in *A Thousand Years of Nonlinear History*.

Following the conclusion of the first phase of the design studio in the summer of 2010, selected students and faculty members will design an exhibition that includes the virtual collection of the Museum of the Society Islands as well as a full-scale mock-up of a building skin system prototype. The exhibition coincides with the online launch of the virtual collection. The exhibition will begin in Los Angeles in the fall of 2010, and travel to Tahiti in the spring of 2011.
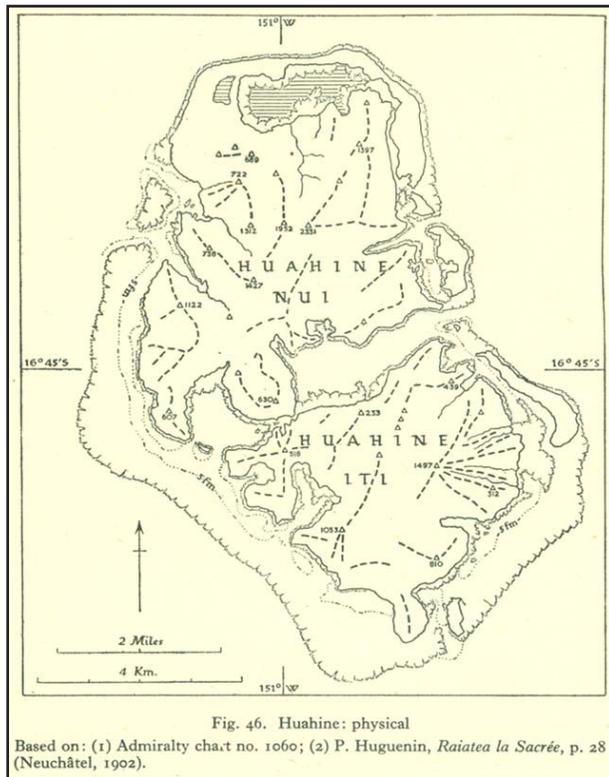
Figure 2: Map of Huahine

ENCLOSURE

> Imprisoned by four walls (to the North, the crystal of non-knowledge a landscape to be reinvented to the South, reflective memory to the East, the mirror to the West, stone and the song of silence) … Octavio Paz, "Envoi"

Our bodies are surrounded by three layers: the first being our skin, the second our clothing, and the third, the buildings in which we reside. Why should the third layer not participate with our bodies in the ways that the other two layers do: sweating, breathing, covered with hair, responding to fear, aging, scarring, tanning, wrinkling; removable, wearable, adjustable, buttoned, stitched, zippered?

Traditional Tahitian architecture consists of both heavy and light, or, to borrow from Gottfried Semper's architectural taxonomy, stereotomic (earthwork) and tectonic (frame and membrane), precedents. The stereotomic precedent is the *marae*.

These open-air sacred places serve both religious and social purposes and consist of terraces constructed of vast stones, squared and polished and weathered over time, and existing in various states of disrepair and decay throughout the Pacific Islands. The tectonic precedent consists of the traditional *fare*, domestic structures built of wood beams, thatched coconut fronds and plaited bamboo. Contemporary structures on the islands can be described as a hybrid of these two precedents, consisting of cement block buildings, with particle-board partitions and corrugated-iron roofing, and offering greater resistance to the threat of cyclones.

In his book *Studies of Tectonic Culture*, Kenneth Frampton refers to these two basic modes of building, the compressive mass and the tensile frame in vernacular architecture, as intrinsically tied to spatio-temporal rhythms and a non-Western nonlinear attitude toward time. He refers to a time when space was not an integral part of our thinking about architecture and seeks to 'mediate and enrich the priority given to space by a reconsideration of the constructional and structural modes' by which architectural form must be achieved. Frampton is less interested in constructional techniques than in

Figure 3: Polynesian *tapa* cloth

'the poetics of construction' which is neither figurative not abstract. In the design studio attention must be given to both: Frampton's 'spatio-plastic unity of interior and exterior space', wrapped by enclosure whether virtual or physical, allowing for multiple space-time experiences, as well as attention to the techniques of construction.

The island of Huahine is itself an open-air museum. Rather than slavish appropriation of historical precedent and clichéd architectural stereotype (consider the ubiquitous resort bungalow spreading fungally across the islands), the studio methodology and design process requires application of new techniques and methods aligned with the entrepreneurial, progressive and 'localized' cosmopolitan culture of French Polynesia. Each team must include as part of the design solution a narrative craft and tools of optimization, whether traditional or digital, indigenous or borrowed.

THE STUFF

By investigating the 'stuff' from which architecture is made, the studio encourages students to translate the physical reality of an 'other' into a unique site specificity. A hyper-local architecture is produced using indigenous materials, deployed and transformed through traditional and digital processes derived from a paranoid research methodology. Territory is interrogated and described through material aggregation and assemblage.

The productive steps of the studio, resulting in a virtual collection as well as a prototypical proposal for a building enclosure, allows students, in Andreas Ruby's words, to weave 'together the various time-spaces of a place to create a trans-historic place'. While the methodology of the course is applicable to any given program on any given site, it gains particular relevance, intensity and applicability when tested in a place of such 'otherness'.

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