In order to make some sense of the Teahouse design, and more specifically its mode of proportioning, scale and materiality, it is necessary to understand something of the context out of which the ‘Culture of Tea’, aka. ‘Teaism’ first developed. This paper will attempt to distill some sense of this ambient culture, and then relate the aesthetic of Zen, to the components of the Teahouse proper, and finally, conclude with an examination of the proportions used in the Teahouse design. UBC’s Nitobe Teahouse was the primary resource studied, which is unique in that it is a ‘traditional’ structure on foreign soil, and thus required a collaborative effort of several designers and builders, of different cultures, to realize.

The context of Zen culture speaks volumes about the far eastern approach to aesthetic ideals, and casts light on what would otherwise be considered a merely ‘vernacular’ approach to design and construction. The early Tea Masters had an indelible influence on the whole of Japanese culture, from the aestheticism of food presentation, to dress and morality, etiquette and architecture, flower arrangement and landscape design. Much that is taken for granted in Japanese culture can be traced directly to this culture of Tea.

The ‘Way of Tea’, more commonly known as Chado, is something that could be called an experience of 'total art'. All aspects of Chado stand in distinct relationship to one another, with the ultimate aim of 'awakening' the participant.

Awakening in this context, refers to the Buddhist state of sustained enlightenment, an expanded and clear sense of consciousness, that extends to every living thing - in time and beyond time. This relates to the Buddhist theory of evanescence, which is also common to Taoist thought, that the phenomenal world is no mere reflection of cosmic law, but that it is the very expression of these laws - that, “It is in us that God meets with Nature, and yesterday parts from tomorrow. The present is the moving Infinity, the legitimate sphere of the relative. Relativity seeks adjustment; adjustment is art.” Okakura pgs. 23,35

Mahakasyapa, apparently, was the only acolyte present at The Flower Sermon, who understood. The Flower Sermon, it is said, was one where, “Standing on a mountain with his disciples around him, Buddha did not on this occasion resort to words. He simply held aloft a golden lotus.” (H.Smith, pg 134)

Mahakasyapa was declared the Buddha's successor. 28 patriarchs later, in 520ad, Bodhidharma introduced the teaching of Zen to Japan. This teaching consisted of the ‘transmission outside of scripture’ which Mahakasyapa understood, and subsequently transmitted. At the core of Zen training is the practice of Zazen, or sitting meditation, upon which all subsequent contemplative arts and studies are built. It is also said that through this meditation, the aesthetic sense develops, such that a correct understanding of the arts of Zen can be discerned.

That the epiphany at the core of Zen training was symbolized by an aesthetic gesture, can explain the highly ‘aestheticized’ aspect of the teaching. It is very much about direct experience, as opposed to immersion in the world of ideas and words.

UBC’s Nitobe Teahouse, North Elevation
Part of the rigor of Zen is to ‘...crash the word barrier’ Hpg136 with the help of ritualized experience, and precise Forms - in order to know of things ‘in themselves’. ‘The followers of Zen aim at direct communion with the inner nature of things, regarding their outward accessories only as impediments to a clear perception of truth.’ Okakura pg. 41

“The followers of Zen aim at direct communion with the inner nature of things, regarding their outward accessories only as impediments to a clear perception of truth.” Okakura pg. 41

To summarize the chief principles of the Zen aesthetic, although this does no service to the more direct approach that the tradition merits, can arouse at least a beginner’s interest, which is all that could be hoped for here.

**Design Principles**

These principles were essentially culled and synthesized from various fragments of Kakuzo Okakura’s *Book of Tea*:

**The mundane, the ephemeral and quality**

The most difficult to understand are these notions of the spiritual in the mundane, and the striving for perfection in the sphere of the mundane. However, therein lies the rigor of the Zen tradition - that the ‘imperfection’ of life can somehow only be most intensely realized in striving after perfection. The complacently imperfect has no need to realize the spiritual, as there is some assumption that it is either already perfect, or that perfection is impossible, whereas the initiate strives for perfection in the constant realization of shortcomings. In this way the process of Zen carries greater meaning than any fixed state, and provides a truer understanding of the difficulty, and necessity of the ideal of perfection.

The Evanescence of the Tao can only be realized in the *process* of perfection, and it is too late to realize this when we are dead. The teahouse is a metaphor for the flimsy abode of the body in the stream of eternity, which “…become resolved into the original waste.” Okakura pg. 54. For this reason, it is constructed of slender members, of impermanent materials, and with a lifespan roughly equivalent to a human life.

Just as every movement in the form of the tea ceremony is calculated and exact, so is the form of the tea house, and its contents. The use of asymmetry in design for Chado is one of its more prominent features. This is said to allow the participant to complete the arrangement, that is to say, that the form of the space is made such that the direct participation of the occupant is bidden. This is related to the Taoist and Zen conception of beauty. “The dynamic nature of their philosophy laid more stress upon the process through which perfection was sought, than upon perfection itself. True beauty could be discovered only by one who mentally completed the incomplete”. Okakura pg. 57

There is also an asymmetry that is revealed in the experience of the tea ceremony - that being one's ineptitude measured against the requirements imposed by the 'rules'. There are so many, that it requires an acute awareness of one's every breath and motion, which is not usually so. However, mere conformance to rules is not the point, as Basho says of Haiku poetry, “Learn all the rules, then forget them.”

To ‘do’ Chado correctly, requires a different state of mind or consciousness. In the same way, the martial art Aikido cannot be done from habit. Both require a relaxed and aware relationship with the body, which is said to bring this state of mind. This state, receptive and alert, can receive the subtlety of knowledge that is communicated through the 'language' of forms in gardening, ikebana, calligraphy and other contemplative arts - that all have common roots in the Tea culture of Zen. In fact, everything in the tea environment is given to assist in the arising of this state in the participant - not the least of which is the tea itself.
**Changefulness, Compromise, Flexibility**

“definition is always limitation, the ‘fixed’ and ‘unchangeless’ are but terms for the stoppage of growth.” Okakura pg. 32 This principle can explain the ready acceptance of the Canadian module of 2x2’s, 4x4’s and the 3x6’ tatami - over the (for us) obscure system of Japanese lumber, and the traditional, 2’-8”, 5’-7”(+-) tatami.

**The Vacuum**

The teahouse is alternatively called the Abode of Vacancy, and the Abode of the Unsymmetrical. Okakura pg. 44 “In leaving something unsaid, the beholder is given a chance to complete the idea and thus a great masterpiece irresistibly rivets your attention until you seem to become actually a part of it. A vacuum is there for you to enter and fill up to the full measure of your aesthetic emotion.” Okakura pg. 37

**Relativity**

“Zennism, like Taoism, is the worship of relativity. One master defines Zen as the art of feeling the polar star in the southern sky. Truth can be reached only through the comprehension of opposites.” Okakura pg. 39.

**Asymmetry**

The principle of the vacuum and asymmetry are related toward the same end, that the human completes the picture (not as an idea, but as an actual fact), and that the unknowable Tao can only be suggested by the incomplete, the vacuum, and the relationship of oneself to the space.

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**Program**

The programmatic aspects of Chado and its architectural forms:

Jowo, an early Tea Master (15th cent.) is said to have canonized the Tearoom’s proportions, from the tatami mat itself - which is the subsequent generator of all Japanese architectural proportion, to the cabinets and utensils found therein.

**Arrival**

- The Roji, or Garden Path, connects the Machiai with the tearoom. It is a path of deliberate irregularity, and consists of gravel and stepping stones, intended to call attention to the act of walking. Many Roji are based on interpretations of particular Haiku, or metred poems.

Left - entrance to UBC’s Nitobe Garden. (not a Roji, although it has one)
Right - A proper Roji, Left - somewhere in Japan

**Waiting**

The Machiai is the portico where the guests assemble to be called by incense to the ceremony.

**The Host/Hostess**

The Midsuya is the anteroom where tea utensils are prepared and washed, and host/hostess prepare, and wait (while guests seat themselves) for the ceremony.

**The Call**

Guests are summoned noiselessly by incense, to proceed along the Roji from the Machiai.
Entry
Through a small door, not more than three feet in height, (to inculcate humility.)

Bowing
Making obeisance to the Tokonoma on entry, which typically houses/features one or two of the other contemplative arts, those of painting/calligraphy, and flower arrangement. These change regularly to express specific wisdom, or to harmonize with the given time of year. The Tokonoma is the shrine of any Japanese home or temple, and consists of a small alcove, or slightly raised base (i.e. 4”), and typically measures about 1.5’ x 3’.

The Tea Ceremony
The Sukiya = tearoom, can be built into an existing house (Kakoi), or function as a standalone building. The orthodox tearoom itself is a 4½ mat room (10sf), which is meant to accommodate no more than 5 persons. This proportion is rooted in Buddhist scripture, from the Sutra of Vikramaditya. Okakura pg. 48

The Ceremony of Tea itself, sometimes together with meals, and the ritualized manner of art appreciation, are all programmatic forms that occur in the Sukiya itself. It is said that a good tearoom can be as costly as a mansion, as that the trades that build them are typically trained in Zen, and operate at an exquisite level of detail, with very select materials.

Departure
In the case of a protracted, or an evening tea, lanterns form part of the tea garden landscape. Typically of granite, and taking many forms, the lanterns serve to focus and integrate all of the specifically arranged vantage points within the garden.
Photographs and VR Panoramas

Entry to Sukiya and Veranda

East Elevation

North Elevation

View to Garden and Veranda (note lanterns)

North Elevation

West and North Elevations
Procedure

The Teahouse was measured in the CAD Bootcamp workshop for 2002, which I instructed. Twelve students were assigned to measure and input the Teahouse in a CAD platform of their choice. Reference to an undimensioned floor plan was allowed. We took measurements from a common datum at the Northeast corner, and took one set of measurements around the perimeter, which were then elaborated and confirmed by measurements from the interior.

The goal of the assignment was to discover the hidden logic of the building, if there was one, and to use that as a logic to organize the 3D model that would be built by each student.

All drawings on the subsequent three pages are entirely my own work, which has been revised three times (during three workshops). At this phase, I had no idea that the Tatami was the governing module, neither did I know anything about the reason for the arrangements of rooms or their relationship to the garden.

This workshop has allowed me to observe the varied approach that students take when measuring a building, such as; the inherency to depend on existing drawings to organize one’s own (I made the first plans without reference to this), the use of a system of measurement that may or may not be rational with respect to the design (i.e. One German insisted on using Metric, which required extensive measurements that did not readily reveal the shorthand of the module), and the frequent omission of vertical measurements (i.e. Roof ridge height, window elevations, floor elevation, etc.). Also, students appeared to resist trusting the module, over their measurements, until later measurements confirmed the module governed. The fact that the autocad floor plan from campus planning was inaccurate did not help.

It seems that this autocad drawing was simply digitized from the working drawings on record from before the teahouse was even built, in the late 60’s. Measurements of posts such as 3 7/8” instead of 4” reveal this kind of inaccuracy. Overall dimensions also expanded the teahouse beyond that which the 3x6’ module would allow, which effectively warped the tatamis in the drawings. I was also chastised for the way that I arranged the mats in my first drawing (by an instructor from the Urasenke Chado Foundation), only to discover on a later visit, that despite how the mats ought to be, that is not how they are.

The workshop was co-instructed by Gwyn Vose, who made a beautiful model and renderings, with the wrong roof pitch, and some misplaced. I mention this only because...
note: tatami mats as proposed do not match current configuration

veranda longer than existing

overall length off by 6"
posts measure 4"x4"
teahouse

a.r.thomson 2002

n
i
t
o
b
e
elevation:north

elevation:west

elevation:south

elevation:east

roofplan and structure

scale:3/16"=1'

bench

entry

vestibule

veranda

sukiya entry

sukiya

entry

sukiya

entry

main entry

tokonoma

rafters

of 1.5"x1.15"
on 4"x4"
purlins

veranda

overhang

sukiya roof

at

hip.
tokonoma

extends

sukiya

roof

overhang

rafter

of

1.5"x1.15"
on

4"x4"
purlins

sukiya

entry

roof
The Language of Teahouse Proportions

**Tatami**

The Tatami governs. That is a simple fact. The Tatami in this case measures exactly 3 x 6 feet, and can be arranged in many ways, which determines the size and quality of a given room. From palaces to tea-huts, to homes, the Tatami is the code of proportion that almost all Japanese architecture follows. In its logic is the 1:2 ratio, 1:1 ratio, and 2:3 ratios. Sorry, no golden section. In the book, *The Power of Limits*, extensive references are made as to the Architecture of Zen somehow conforming to the Golden Mean, but after searching high and low, it simply could not be found without inferring it from some ridiculous geometric manipulation. The structural grid also lines up where there are tatami-seams or joints. The exception to this rule, is the 4’ wide hall.

**Structural Module**

The structural lumber of the teahouse begins from ½” x ½” members used in shoji screens, the first layer of roof structure, shelving, cabinets and other details. Then to ¾” for shelving, 1 ½” x 1 ¾” for rafters (second layer) and working up to 4”x4” for all columns. Beams ranged from 4” (i.e. top-plates), to 6”, to 10”. Some rounded members and bamboo were used on the veranda, and in the sukiya and tokonoma, as per tradition.

This structural logic did not overlap the module of the tatami, but ran parallel. That is to say, 4” separated every room, and could be read from the 4” thresholds. The structure ‘frames’ every room with 4” members, from the corners to the ceilings, to the floors. All shoji screens are set into this 4” structure, which then serves three functions, as an aesthetic ‘break’, as hardware, and as structure.

Apparently, Japanese lumber modules are similar (according to the Japanese participants) but not identical to our imperial dimensions. The adoption of the Canadian lumber module is probably an expression of respect and flexibility to the way of working here.

**Sections**

The sections reveal the slight variations from the main entry, the sukiya entry, the hallway elevation, and the differences in ceiling height in the different rooms. The sukiya is the most complex room in section, with penetrations of the exterior roofs into the ceilings and vice versa. The exterior of the sukiya is intimately fused with the exterior, in both massing and fenestration, which is probably the origin of this trait in the modern architecture of Mies, Wright and Erickson.

**The Elevations**

Elevations best portray the broad overhang (3’), grade beam on rock foundations, window and shoji, and give some sense of the openness and lightness of the teahouse. When all shoji are opened, the roof appears to hover, and from certain perspectives, where one can see clear through the building to a tree or lantern perfectly framed in the distance, the sense of the ephemeral and the evanescent is acute.

**Perspectives**

The experience of the building is very different than the sense that the drawings convey. Because we see perspectively, in actual fact the roof appears broader, and the pitch steeper than it actually is - and the sense of shelter - even though the structure is never heated, is unmistakable.

**Conclusion**

In conclusion, it must be remarked that an immersion in the ambient culture that produced a given architecture can lend a much better understanding of both the program of the building, as well as its form. It is still unclear to me how the tatami was derived, and why it in particular holds such importance in the architecture of Japan, but before this project, I didn’t even know what a tatami was. It was incredible to discover the logic of the building, which probably prevails through design and construction. Drawings are often lacking, but a foreordained module is a sure thing. That a rectangle can generate so many interesting spaces, by virtue of simply adding its different lengths is something that will not be forgotten - and lastly - it is worth discovering a building on its own terms and in its own language, instead of imposing some kind of *a priori* system i.e. Phi, or the generatrix, or any other, as they may obscure the message that the building is actually communicating.
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