Apprenticeship With a Shokunin A Search for the Source of Quality in Japanese Architecture

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World renowned architect Fumihiko Maki reminisces about his childhood in Tokyo in the foreword to Dana Buntrock's book *Japanese Architecture as a collaborative process*

> "The sounds of men at work echoed pleasantly in the otherwise quiet residential district. The air was filled with the fragrance of fresh wood shavings. The carpenters wielded their tools with steady hands and, from time to time, examined intently their own handiwork."[1] If this sounds like the beginning of a nostalgic story about paradise lost it is not. Maki goes on to assert that although the materials and methods of construction have changed since his childhood in the 1930's " that culture lives on".

These four words constitute the most true, important, and perplexing statement that I have heard in regards to the state Japanese architecture in the 21st century. It resonates with me as truth because of my own experience of working on and visiting Japanese construction sites over the past twenty years. Although I have become accustomed to the focus and dedication of the trades people I will never forget my astonishment on my first few visits to construction sites while employed at Team Zoo. Maki's statement is important to me because It is the first time that I have heard a Japanese architect depart from narratives on theory to talk about what I feel is a key dynamic contributing to the high quality of architectural work in Japan. And his statement is perplexing because even with twenty years of experience working in Japan the reason that the Japanese trades people take such pride in their work is elusive.

As an example of how the "culture lives on" Maki writes "if the installation of a complex element on a building site proves difficult, people of different trades will meet to discuss the problem with the architect. The tradesmen on such occasions have the same intent faces as the carpenters of my childhood. If a small metal piece needs to be affixed just so to the structure, the work is done with hands as steady as those of the craftsman I watched long ago."[2] To the question of how the spirit of craftsmanship lives on in contemporary construction Maki answers " I believe it lives on in the pride people take in the work they do and the things they create, no matter how small."[3] To those who have devoted long hours to studying management techniques and matrixes of professional relationships in search of the "Japanese miracle" the simplicity of this statement may seem trivial. But the aspect of the Japanese construction industry which has always impressed me has nothing to do with managerial technique and corporate structure, it is as simple as Fumihiko Maki stated " The pride people take in the work that they do".

From the mid 1980's I worked for Team Zoo in Kobe, Japan where I became accustomed to collaborating with craftspeople. Dana Buntrock wrote "Some Japanese designers encourage artisans to evolve through on-going ties to specific crafters. In this way, architects promote both demand and flexible application of skills… Not surprisingly, one of the organizations most committed to such alliances is Team Zoo, which is itself a co-operative, including architects, landscape architects, planners, furniture makers and graphic designers".[4] Through my association

with Team zoo I came in contact with many talented craftspeople and I was able to watch and study their work. These craftspeople or *shokunin* as they are called have a long history in Japan and their exceptional skills and work ethic exemplify the pride that Fumihiko Maki wrote about. I am convinced that any discussion of quality in Japanese architecture both traditional and contemporary must start with the influence of the *shokunin*. But first it is important to understand the implications of the word. Toshio Odate points out in his book *Japanese Woodworking Tools* "such a literal translation [ie. Craftsman = *shokunin*] does not fully express the deeper meaning. The Japanese apprentice is taught that *shokunin* means not only having technical skill but also implies an attitude and social consciousness."[5]

Fig. 1 Tamotsu Edo

Tamotsu Edo is a master carpenter who started his apprenticeship to his father at 15 years of age. At 16 he assisted his father in building a teahouse one of the most demanding building types for a master carpenter. By the age of 20 He had built a reputation as one of the most skilled craftsmen on Awaji Island and is often asked to do temple buildings the work of the most highly respected *shokunin*, the *Miya Daiku*.

I began my apprenticeship with Tamotsu Edo in the spring of 1991. For the first couple of months I concentrated on sharpening plane blades and finishing wood members with the sharpened blades. Because of my age and background as an architect Edo allowed me to bypass the months of running errands and cleaning up after the master carpenter that are typical of a traditional apprenticeship. Until the Meiji Era [beginning in the late 19th century] an apprenticeship started at a very young age and lasted for 10 years. From the Meiji era however mandatory junior high school education was implemented and apprenticeships typically started from 15 years of age and lasted five years. Regardless of the time frame the aspiring *shokunin* is expected to learn the self discipline, skills and technique necessary to be a full fledged *shokunin* refered to as *ichi nin mae.* The title implies that he/she is capable of going to any master *shokunin's* shop and performing the necessary tasks of the trade. Yonekitchi Takeda, a shokunin trained during the Meiji era wrote in his book *shokunin* that "to become *ichi nin mae* requires many years of extraordinary effort so the title is one that brings great pride to the Shokunin."[6] But, as Edo cautioned me many times, skill and hard work are not enough. The *shokunin* must also work quickly to be able to support himself at his trade and to win the respect of the client and other *shokunin*. Similarly Odate wrote "The *shokunin* demonstrates knowledge of tools and skill with them, the ability to create beauty, and the capacity to work with incredible speed"[7]

During my association with Edo he continually emphasized the importance of tools in the life of the *shokunin*. The contemporary word for tool in Japanese is *"dogu"* but this word was originally reserved for sacred instruments used in Buddhist rituals. The meaning was gradually expanded to, first, include instruments of the samurai and then instruments of the carpenter. After the samurai were outlawed in the meiji era many of the sword smiths turned their consummate skills to making carpentry tools. This set the standard for Japanese blacksmiths to produce the world's highest quality blades for the use of the *shokunin*. Yonekitchi Takeda points out that "the carpenter felt about his tools the

same as the samurai felt about his sword… The *shokunin* would never buy a set of cheap tools all at once even if he didn't have much money. Instead he would buy good quality tools gradually as his finances allowed."[8]

Edo San's tools were an illuminating reflection of the considerable pride that he took in his work. They were immaculately maintained and there was never a spot of rust on any of the blades. Each one had a perfectly honed edge and a shiny oiled finish. Each had its own sheath or case where it was carefully replaced at the end of each day. Some of the chisels that he used were passed down from his father and over decades of use the laminated blades were worn all of the way to the shaft. Edo San told me that his aspiration as a young man was to make a living with a single tool, the carpenter's square. He was referring to the importance of mastering the use of the square as a design tool of the carpenter. An experienced master carpenter can use the scales on both sides of the square to do a range of calculations quickly and accurately on the fly. To watch Edo work and to see the immaculate condition of his tools there was no question about the importance of the tools in his trade. But I learned the real extent of the *shokunin's* reverence for his tools one morning on the job while sharpening a plane blade.

The back of a Japanese plane blade is hollowed to reduce friction. After sharpening the bevel of a blade several times the flat perimeter of the hollowed back side wears thin. At that point it is necessary to get a perfectly flat stone and grind the back of the blade until there is about an eighth of an inch of flat perimeter around the hollow. It is absolutely essential that the back of the blade be ground perfectly flat to assure optimum performance. On that morning my waterstone was worn unevenly and had a dip in the middle. I was attempting to flatten the back of the plane blade by selectively using the flat end sections of the stone. When Edo san saw what I was doing he yelled and pushed me away from the stone. His reaction startled me but it was the nature of the yell that pierced my consciousness. It sounded like a scream of pain as though he were feeling the unevenness of the sharpening stone against his skin.

It might seem obvious on the surface that the *shokunin* would want to take good care of his tools. After all a plane blade worth it's salt costs four or five hundred dollars. But I discovered that the cost of the tool was not the issue. It was the usefulness of the tool that gave it value and animated it in the eyes of the *shokunin*. A pencil was treated with the same care as a valuable chisel and sharpened many times until it was a stub. In a capitalistic society where everything is a commodity and has a monetary price this seems incredible, but in the animistic Shinto tradition of the Japanese, elements of the natural environment and even manmade objects are thought have a spirit. A tool is a very special object because it supports someone's livelihood so it is thought to have a spirit like a living thing. In fact, as Team Zoo founding member Kinya Maruyama explains " the tool is seen as an extension of the *shokunin's* body"[9].

Fig. 2. Carpenter's Tools

One illustration of this idea, which is still common in contemporary Japan is the tradition of the *hari kuyou*. When a sewing needle is broken it is taken to a shrine where a priest will pray to thank it for its service and to retrieve the spirit of the owner which is partially invested in the tool. *hari kuyou* is was started hundreds of years ago when sewing clothes was an important task of all women but it continues to this day. Similarly, Toshio Odate wrote "When I was a *shokunin*, we celebrated the tools every New Years Day. We cleaned them and our toolboxes and put them in the *tokonoma*. We put a small piece of rice paper on each box and then two rice

cakes and a tangerine. This simple gesture is the traditional way of thanking the tools for their hard work and for the crucial role they play in the *shokunin's* life."[10]

Fig. 3. Cutting the Frame

In the same way that the *shokunin* shows respect for his tools he is equally respectful of the materials he comes in contact with. S. Azby Brown wrote in *The Genius of Japanese Carpentry* "The almost religious reverence for woods, fortunately for us, is among the many traditions that have stood the test of time. A tree like other natural phenomena, is believed to possess a spirit, and a carpenter when he cuts down a tree, incurs a moral debt."[11] One example of the *shokunin's* respect for materials is the great care he takes when positioning a post. The carpenter is always careful to place it in the same vertical orientation that it had as a tree and to finish the wood naturally with a plane instead of sanding it or painting it, which would impair the surface. In former times when the carpenter was able to choose the trees for his buildings, he chose trees exposed to the sun for the south exposures of the building and trees from a shaded slope for the north side. Respect for materials can be mistaken at times for plain frugality. The worst insult that can be given to a material is to waste it and any apprentice faces the wrath of the master carpenter if he miscuts a piece of wood so that it is rendered unusable. However this is not mere thrift, it is indeed a reflection of respect.

It is easy to understand the pride that a skilled craftsmen has in his work but the *shokunin's* pervasive aura of humility is a subject of curiosity. This sense of humility is an important factor in the *shokunin's* ability to collaborate with other trades and well coordinated collaborations contribute to the general high quality work. Yonekitchi Takeda's explanation of the concepts of *giri* and *shinyo* sheds some light on the humble psyche of the *shokunin*. " The Master carpenter provides meals lodging and incidentals to the apprentice which generates a sense of responsibility in the apprentice."[12]The *shokunin* refer to this sense of duty and responsibility as *giri*. Takeda goes on to explain that "the apprentice is being accepted into a supportive institution where, if he does good work, he will always be provided for so the trust that he establishes between himself and the master carpenter is crucial"[13] similarly "the master carpenter is being provided for by the client so he must be careful not to loose this trust." Loosing trust or *shinyo* is the equivalent of a *shokunin* cutting his lifeline. In addition to the sense of *giri* and *shinyo,* humility may also be the natural result of adhering to the *shokunin's* creed. Toshio Odate wrote "The *shokunin* has a social obligation to work his best for the general welfare of the people. This obligation is both spiritual and material, in that no matter what it is, if society requires it, the *shokunin's* responsibility is to fulfill the requirement."[14]

One of the tasks of the carpenter *shokunin* is the marking and cutting of timbers for the frame raising. The process starts with the master carpenter making a detailed list of members that are required for the structure and submitting it to the lumberyard. All of the beams and girders are cut to the carpenter's specifications and delivered to the warehouse. Using an inkline the master carpenter marks each member one at a time while the other *shokunin* begin the work of cutting joinery. The marking process requires considerable knowledge of the construction system, skill in using the marking tools to make precise accurate lines, and concentration to mark literally hundreds of components in the correct locations with the appropriate joinery. Tools are sharpened several times a day and the insides of mortises and the shoulders of tennons, which will never be seen once the building is assembled, are cut neatly and shaved smooth with chisels. The posts, which are planed to a glossy finish, are wrapped carefully in paper to protect them during the frame raising. Nothing is pre-fitted in the

warehouse and only time tested marking system and the experience of the Master carpenter ensure that the hundreds of pieces will all fit together when brought to the site. In the past, this engaging and challenging process drew many of the smartest and most talented youth to the trade of carpentry and competition between these talented people resulted in a high degree of refinement in the trade.

Once, during a break from cutting a frame, I asked Edo San why he put so much care into work that no one would see. He responded that "someday this building will be demolished and they will know that it was built by a good carpenter". Kinya Maruyama has another explanation, which he believes may also be a factor in the high quality of Japanese building construction in general. In Japanese the word *haji* refers to a sense of shame. According to Maruyama "The shokunin is very conscious of how his work looks to other shokunin and to have sloppy work seen by his peers is *haji.*"[14] Yonokitchi Takeda refered to *haji* in several different scenarios of the shokunin. For example " not having mature skills and working slowly is *haji*"[15]... "Taking a rest before the job is finished is *haji*"[16]... and "repairing tools during work hours is *haji.*"[17] Takeda also refered to *haji* in relation to the clothes that were worn at the construction site and the kind of food that was eaten at restaurants. Maruyama contends that *haji* is still pervasive among contractors in the cutting edge Japanese building industry of the 21st century and "without *haji* the quality of construction work would not be as high."[18]

The rituals of the construction process are another source of meaning and pride to the owner, the shokunin and the community that transcends the physical reality of the building. The first ritual is the blessing of the site by a Shinto priest before ground is broken. The owner, his family and close friends and the chief carpenter take part in the ritual that marks the beginning of the construction stage and unites the shokunin and client for the first time officially in the common cause of the project. After the foundation is finished and all of the elements of the frame have been cut the next benchmark in the process is the frame-raising day, which is celebrated like a festival in the neighborhood of the site.

Fig. 4. Frame Raising Ceremony

All of the workers wear the same color headband and the owner has food for everyone from morning to evening. The frame is assembled methodically by a team composed of the carpenters and other trades people who will work on the job. At the end of the day after the frame has been raised there is a Shinto ceremony held on top of the structure with a priest, the chief carpenter, the owner and other special guests. Once again the Master carpenter is at the center of the ceremony which ends with rice cakes wrapped in plastic and bags of candy being thrown from the roof to the delighted neighbors who have assembled below. The construction of the building is a community event and the shokunin are In the spotlight and are respected by the adults and idolized by the children. All of these factors combine to give the shokunin a sense of pride in his work. During the frame raising process the shokunin's work is exposed for all to see so the Haji factor is a kind of culturally programmed quality control that keeps the shokunin constantly on his guard to do the best possible work.

Despite significant signs of vitality, the crafts traditions are in danger in Japan as in other industrialized countries. Kinya Maruyama reflects that "the shokunin work ethic and sense of pride is waning as economics become the bottom line in the construction industry."[19] In contemporary Japan the shokunin is employed not by a master shokunin but by a contractor who is increasingly pressured to have his project meet a budget. This results in a shortened construction period and the hands-on work of the shokunin are often replaced by automated processes. We have become familiar with the systematic

dismantling of craftsmen's traditions around the world and Japan's situation does not seem unusual or surprising. However, the visible signs of the shokunin's influence on work habits, which Maki alludes to, in technologically advanced 21st century Japan is surprising.

David Stewart writes in his *Making Of A Modern Japanese Architecture* about historical events which helped to keep the influence of the *shokunin* vital well into the middle of the 20th century. He writes "In Japan new access to long-untapped reserves of national tradition had paradoxically been opened up by the war."[20] Manufactured goods were unavailable for ordinary building purposes and there was an "official promotion of wooden construction techniques in the place of steel during the years of the sino-japanese conflict in the late thirties"[21] This meant that after a long hiatus when masonry and steel construction had become the norm the shokunin were called once again to build with wood and earth just as they had historically. Influential Architects like Kunio Maekawa, Kazuo Shinohara and Kiyoshi Seike were rediscovering the Japanese vernacular during this period and the work of the shokunin was once again in demand.

Finally, Botond Bognar in his book *Contemporary Japanese Architecture* points to another historic factor, which may help to explain the lingering influence of the *shokunin* in the 21st century. At the beginning of the Meij Era, when Japan was importing western culture, western building designs were first adapted to Japanese building applications by the master carpenters who built them in wood. Bognar points out that "These very same carpenter dynasties later founded several of today's biggest construction companies" he adds that like their carpenter guild beginnings "the new companies have carried on the tradition of total building activity from architectural design through production, research, engineering and construction work."[22] It is possible that the link that these companies have with an earlier era has acted as a conduit for the ways of the shokunin to be translated from their proud past to the present. It is also important to note as Maruyama points out that "the modern era has produced many new kinds of Shokunin for concrete, steel, and glass construction."[23] and he echoes Maki's sentiments when he adds that "These new shokunin carry on the sense of pride and haji of their predecessors."

Endnotes

1. Fumihiko Maki, Foreword to Japanese Architecture as a Collaborative Process [London, New York: Spon Press 2002] pp.xi
2. Ibid.
3. Ibid.
4. Dana Buntrock, Japanese Architecture as a Collaborative Process [London, New York: Spon Press 2002] pp.102
5. Toshio Odate, Japanese Woodworking Tools [Newtown, Connecticut: The Taunton Press, 1984] pp.viii
6. Yonekitchi Takeda, Alexander Tzonis, Shokunin [Tokyo: Chuou kouronsha 1991] pp.
7. Toshio Odate, Japanese Woodworking Tools [Newtown, Connecticut: The Taunton Press, 1984] pp.viii
8. Yonekitchi Takeda, Alexander Tzonis, Shokunin [Tokyo: Chuou kouronsha 1991] pp.
9. Kinya Maruyama, Telephone Interview [October 13, 2006]
10. Toshio Odate, Japanese Woodworking Tools [Newtown, Connecticut: The Taunton Press, 1984] pp.viii
11. S. Azby Brown, The Genius of Japanese Carpentry [Tokyo, New York: Kodansha International 1989] pp.21
12. Yonekitchi Takeda, Alexander Tzonis, Shokunin [Tokyo: Chuou kouronsha 1991] pp.
13. Ibid.
14. Kinya Maruyama, Telephone Interview [October 13, 2006]
15. Yonekitchi Takeda, Alexander Tzonis, Shokunin [Tokyo: Chuou kouronsha 1991] pp.
16. Ibid.
17. Ibid.
18. Kinya Maruyama, Telephone Interview [October 13, 2006]
19. Ibid
20. David B. Stewart, The Making of A Modern Japanese Architecture [Tokyo, New York London: Kodansha International 1987] pp.191Botond
21. Ibid.
22. Bogner, Contemporary Japanese Architecture [New York : Van Nostrand Reinhold Company, 1985] pp.
23. Kinya Maruyama, Telephone Interview [October 13, 2006]