

**IAESTE UK Trainee of the Year Award 2003**

***Summer of Rising Suns & Sleeping Earthquakes***

***in***

***Tokyo***

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**Robin Campbell**

Civil Engineering, Cardiff University

July – September 2003  
Nishimatsu Construction Ltd.  
Tokyo, Japan

"*Hajimenmashite*," I mumbled nervously whilst concentrating on bowing and not bumping the greying head of Nishimatsu Construction's Managing Director facing me across the boardroom table. In a flash I was to take part in my first ritual as his crisp white business card appeared into the stuffy room out of a silver case. I accepted in my right hand supported by my left whilst silently trying to pronounce the name printed in neat black letters and hopefully all with the appearance of reverence the guidebook had stated was vital. I probably had made my first faux pas as I let out a little smile – my work in Japan had finally begun!

The experience I was to have in Japan exceeded any hopes I had. It would involve more learning, across a wider breadth of fields than I could have possibly foreseen or probably believed. I would visit scores of fascinating places, witness many forms of construction and discover a lot about the profession I am due to join a few years. I learnt about the people I was to meet, the places I would visit and definitely about myself.

The journey started in the psychological sense at 9,900 metres over the Sea of Japan sitting next to Ms Hiromi Masegi, a petite office worker from Ishikawa City. She was intrigued that I was travelling some 5900 miles to a country where I knew no one. Beneath her giggles hidden by her hand I suspect she found the whole notion frightening as she gave me her address, some coins for a pay phone and instructions to call her if I ever had problems. For me she personified why I was not to be scared; her good will, sound advice and obvious delight that I was going to experience her country was my introduction to the approachability and friendliness of the Japanese to me, a "*gaijin*."

Two hours after landing, I had already found to my peril Japan is a cash-based culture with few ATMs and that the 'Express' train on which I sat on is slower than the 'Limited-Express' variety I had paid for. Sitting between a lady wearing a beautiful *kimono* and a farmer with wooden *geta* clogs and the *hachimaki* headband symbolic of working, I was delicately informed of my fate – the slow train took a further fifteen minutes and would arrive at 10.36am. I watched in amazement as the digital platform clock clicked 10:36:06 as we rolled in - welcome to the land of punctual trains!

Later that day, I found myself staring up at the huge red lantern hanging beneath the Gate of the God of Thunder of Asakusa Kannon Temple surrounded by IAESTE's Tokyo Local Committee members and other trainees from many countries. The temple was so different from my previous experience of living in a rural Theravada Temple in Sri Lanka that I was sceptical it was even Buddhist! Tokyo on first impressions was everything I expected and yet at the same time nothing like it. From this point on I decided to try to manage my preconceptions and expectations of Japan. This mindset I found later helped give the necessary degree of flexibility I needed to be open to the varied nature of my placement and ultimately put me in a better position to benefit from the experience.

Since I had arrived a week early, over the next few days I managed to see a lot of the mishmash of Tokyo with its overriding sheer level of energy. Seeking sanity, I headed first to the cooler hills north of Nikkô, famous for its temple and shrine complexes. Amongst the great cedar forest I found Tôshô-gû Shrine's three famous monkey carvings depicting "hear no evil, see no evil, speak no evil" less inspiring than the imaginatively carved elephants by an 17<sup>th</sup> century artist who famously had only *heard* descriptions. Maybe we all formulate images based purely on hearsay, just as the woodcarver did?

I continued on my travels by shooting west on the gliding bullet train to Hiroshima. The overriding feeling of Enola Gay's task was one of sheer futility and tragic personal cost. The story of Sadako, the 10 year old girl who died of leukaemia mid-way through her task of folding a 1000 paper cranes on the conviction that had she would recover on completion gave a face to the impersonal statistics. I personally cling to the hopes that a greater catastrophe like an extrapolation of Okinawa was avoided and that there will never be another city needing an A-bomb museum.

Lastly I joined a group of IAESTE trainees climbing the 3776m of *Fujisan*. The forecast was terrible but luckily we were serenely above the clouds. It required perseverance against the

bighiting wind, lack of oxygen and steep terrain. From the summit we watched the *goraiko* as the sun licked the clouds below. The Japanese have a saying, "If you don't climb Fujisan, you are a fool. If you climb more than once, you're a fool." I have no intention of being a fool!

"*Kita-Matsudo des*," the conductor announced proudly as the subway train came to a punctual stop in this pleasant north-eastern Tokyo suburb that was to become my home. I had been met by an IAESTE representative and also had been joined stumbling with laden suitcases by Vitali Kochkine, a Russian IAESTE trainee from Germany who was to be partnered with me during my training. The acceptance form had said, "dormitory," so the 7 floor en-suite flats with balconies were a pleasant surprise! After meeting some other Engineers who lived there over dinner at a nearby sushi restaurant and nearly forgetting the customary exchange of outdoor shoes for slippers at least three times, we managed to get to Nishimatsu's office on time the following morning after a hurried early morning breakfast and by 8.45am we were being introduced to Minoru Hirano San, the Managing Director.

Throughout my studies, I have always enjoyed the application of theory in the form of design projects and such coursework which involves logical thinking, strategy and creativity to reach the solution. From my limited experiences with Gifford design consultants and Sir Robert McAlpine contractors I have witnessed that these skills are almost as important as the governing theory. From this position, my professional aim was to experience as much 'real engineering' whilst absorbing the differing working practices.

Nishimatsu Construction is one of Japan's leading general contractors and has offices in a dozen countries, primarily in Southeast Asia. In their 67 year history they have been involved in numerous large-scale civil engineering projects including airports, dams, skyscrapers, ports, power plants and thousands of tunnels. We were based in their Tokyo Head Office's Civil Engineering Design Department and moved around the different Design Groups to see their different specialisms.

Our training consisted of a mixture of lecture or seminar style explanations of the processes and principles before being introduced to some example projects they had been involved in and visiting construction sites to see first hand how the theory was applied in practice. From the first day's blur of introductions, the people in the office were all incredibly welcoming, if shy and on the first evening we found ourselves in a restaurant chatting with our new workmates as we struggled to keep up with the stream of unidentifiable dishes that arrived at our table!

The second day we were learning about soft ground tunnelling and donned the somewhat fetching brown site uniforms to visit the Fujimigaoka Subway Extension in Yokohama City. We were shown around the 700m subsurface line contract by the chief site engineer who took great pride in explaining the solutions they had used to traverse a dual carriageway and a excavate a 22m long tunnel in poor soil with very low overburden below a road. This project was typical of the many we were to visit. My lasting impressions were one of scale (as I had never visited such major civil works before), of complexity, of pride in their work, and of cutting edge technology and practices.

During the subsequent weeks we were to discover and learn about a wide range of aspects of civil engineering, unfortunately too many to mention each in detail. In brief these included:

- Shallow urban tunnel construction and visited the suburban railway Joshin Minami-Nagareyama extension, excavated through a cut and cover method, beneath a dual carriageway and traversed by a railway.
- Structural design in relation to earthquakes using the Great Hanshin-Awaji vertical-thrust Earthquake as an example.
- High-Speed Element Pull and Jointed Element Structural methods and saw the Mimitori canal diversions works at Fukushima, constructed through an operational railway's embankment.
- Mountain rock tunnelling (in particular the application of the New Austrian Tunnelling Method) by visiting Suzuka road tunnel in Mie Prefecture, an 18m wide central-drift tunnel.

- Ground deformation issues particularly in relation to the Dublin Port Tunnel as it passes 2m beneath a railway.
- Slurry and Earth Pressure Balance Shield tunnelling and visited the SJ46 road and Kizawa sewage tunnels with diameters of 11.5m and 2m respectively.
- Observational construction procedure of pipe-roofing of NATM method based on back-analysis in relation to Shin-Minatogawa tunnel.
- Temporary retaining walls and witnessed a redevelopment site in Fuchu City where a 21.4m basement was excavated 6m from a mainline Keio station.
- Landslide protection methods by visiting the Asoh Landslide Protection scheme at Chichibu Dam where a 240m sliding segment of hillside is being stabilised by piles being bored through the slip-plane.

Our training allowed us to see a wide variety of projects and to expand our knowledge of most fields of Civil Engineering, particularly tunnelling. The only negative side about our style of training was that we were not given any main project or task to concentrate, focus on and to get satisfaction from having achieved. I do concede that, in view of our limited language and Japanese design code knowledge, this would have been very difficult to implement.

After settling, we began to search for additional ways that we could use our skills, being native English speakers and some knowledge of Western construction, to be of use to our employers. Our efforts were aided by the wide degree of freedom offered by our coordinator Matsuzaki San and saw us giving several presentations to the design groups on topics such as notable construction projects built in the UK as part of our Millennium celebrations. I was also able to build on my experience of teaching English in Sri Lanka by helping at a weekly English Conversational club run by the company. The benefit of these were very much two-way, as they proved an excellent stimulus of communication skills, both a means for exchanging information and learning about our different perceptions of each others countries.

In the second week we joined a group of engineers visiting a Sewage Exhibition at the Tokyo Big Site Centre involving over 400 companies selling the latest advances of sanitation and drainage technology, usually with help from beautiful women wearing *kimonos*. As the exhibition drew to a close, I had an inch stack of business cards in addition to the standard corporate goodies, making a nice addition to my other 21<sup>st</sup> birthday presents! This was followed by a wonderful party in the evening and every photo has a mass of the seeming obligatory 'peace' signs!

The Japanese Office is unlike any I have worked in previously. The open-plan layout was a strange mixture of old and new as glistening laptops hummed on aging desks amid stacks of files and paper almost penning-in the occupants. At three o'clock the tannoy burst to life as company music to accompany *chorei* (daily exercises) but this seem to be largely ignored. The *kigyo-senshi* (corporate warriors) are true to their workaholic, industrious reputation and put us to shame even with our trainee keenness of arriving at 8.15am and usually leaving around 6.30pm! The official Statistics Bureau's figure of 47.5hr weeks for male construction workers (2000) is somewhat low. Some consider this to be a result of believing their country is poor, but with one of the highest GNP per capita in the world I would suggest it is more an effort to show solidarity with their colleagues. Women in the office held principally traditional roles of clerks and secretaries and were generally not treated as equals. I found this and the notion of 'encouraged' retirement after marriage difficult to comprehend but it is a *ryosai-kenbo* (housewife's) prime virtue to sacrifice herself for her family. After leaving work it would be unusual for anyone to not to relax in an almost prescribed way of going to a bar, bringing colleagues closer together but maybe families further apart. Perhaps the barrier between personal and professional feelings of responsibility are less well defined?

Language was a barrier that was to challenge practically, socially and professionally. My "Learn Japanese in a Month Book" soon got shelved as I tried to absorb the cascade of information hitting me through every medium. Memories of the satisfaction of recognising my first kanji ("Tokyo" - thanks to a ticket and boring train journey) are vivid. When communicating, I tried to build on workmates' English. Their spoken confidence increased remarkably and hopefully I also helped them improve their skill. Interestingly many could read

and write in English to a far higher level than when speaking and most had difficulty with my non-American accent, both thanks to the influence of the Japanese curriculum.

Having had Tokyo Tower standing directly in our view from our desks for several weeks, we headed out after work to climb the height-beating Paris mock-up. Watching the sun set over the endless city cobwebbed with cables, your sense of proportion becomes distorted and I found myself making analogies with a living organism as the highways turned blood red. It seemed a slightly chaotic patchwork, helped perhaps that numbering and street names never really caught on. Having become familiar with our daily patches, it was good to see plenty more remained unexplored!

The following week was a public holiday, in which I went to DAYS 2003, the residential camp in Gifu Prefecture organised by IAESTE Japan – lots of paper-kite flying, Super Kamiokande visiting, rice cake cooking, calligraphy, parties and seeing the wooden houses of Takayama. After a brief flash of Kyoto during the *Daimonji* festival (when bonfires write kanji characters on the surrounding hills) and ancient Nara with its secluded temples and beautiful deer, I headed back to Tokyo for our next phase – Shikoku Island!

Our departure to Shikoku was livened thanks to wearing thick metal safety-shoes through the metal detector and, in an example of Japanese efficiency, the small penknife I had forgotten in my pocket was carefully returned to me upon arrival to Japan's fourth largest island, south of Honshū. We were to spend three weeks at three construction sites to gain a more in-depth knowledge of construction practices. First we stayed at Misaka tunnel's remote site office, high in the central-western highlands. We were accompanied by Hiroshi Ichikawa San, a retired director of the Hong Kong branch, who was able to explain the processes in far greater detail thanks to his fluency. We visited the Jiyoshi road tunnel, where progress had been halted by reaching a series of hydrated faults and over 200m head of water pressure had caused some 20 tonnes of water per minute to gush from a hastily erected 20m bulkhead – scary!

During a weekend we spent with Mr Ichikawa, we got onto the topic of religion. Cagily he revealed he considered religion to be but one philosophy by which to live your life but admitted contrasts with the Japanese norm. My impression is skewed since conversations were limited to friends with near fluent English but I feel that although not obvious, the Japanese are deeply religious. Whenever we visited temples or shrines with our Japanese friends the major role it plays became clear. Shintoism is almost a fundamental part of Japanese life, merging custom, religion and superstition, and it is intertwined with the State. Buddhism, filtering through from Korea and China, accommodated the indigenous Shinto beliefs and joking about preference of rituals it is said that people are born a Shinto and die a Buddhist.

After staying briefly at a Distribution Reservoir site in Matsuyama City, we headed east to the Matsuo-gawa Hydropower refurbishment scheme. The extremely inaccessible location required unusual solutions including an incremental cable crane system, workers monorail and a traffic control scheme.

During our time on Shikoku we had managed to visit all three bridge links with the mainland, crossing the fast flowing Inland Sea and comprising of 18 long-span bridges including the world's longest suspension bridge, Akashi Kaikyo. Seeing the scale of these bridges and the emptiness of their carriageways thanks to exorbitant tolls, it put my experience with the Japanese construction industry in context. It is a key-player in domestic economic and political activity; building engineering marvels that are mammoth in scope and scale as well as in controversy and cost. The government has repeatedly relied on public works spending to counter economic slowdowns. Japan spends more on construction than any other nation, with its share of GDP growing to 9.9 percent in 1995 according to the Economic Planning Agency whereas in America it was falling to 3.9 percent in 1994 according to the Department of Commerce's Bureau of Economic Analysis. The effects of the deflation of the late 1980s' bubble were initially cushioned by such public works, but as the government focuses on controlling its budget deficits, a general stagnation occurred as internal competition increased,

domestic demand declined and capacity exceeded export or home needs. Nishimatsu's \$3.7million net loss in 2002 was typical as it strove to cover writing-off a build-up of unsound projects' bad loans. The overriding feeling of past greatness and the feverish struggle to return was almost tangible in every workmate.

Arriving back in Tokyo with its sheer volume and density of people was a shock but it was good to see all our good friends and workmates again. This opportunity to witness their actions in a more measured way instead of when jet lagged proved very interesting. As one friend explained there is often a level of tacit understanding between two people that I found hard to intercept. That said, many of the quirks, mannerisms and non-verbal messages I conclude aren't alien to me but are similar to many perhaps slightly exaggerated Western practices. For example, they usually aimed to avoid directness and confrontation during conversations, including using the bluntness of saying "No". At first I had 5 minute conversations to find that the bank had no ATM, but soon you catch yourself doing it! An extension of this is the blank face that at first conveys no message but you learn implies they cannot answer a question, either from not understanding, not wishing to show annoyance or not knowing how to answer it. Also the *honne* (inner man) and *tatemae* (outer mask) two-layer concept so vital in their quest to preserve group harmony is not unique to Japan.

In Tokyo more than anywhere else, the combination of the brash urgent rhythms of neon 21<sup>st</sup> Century consumer culture and the lingering quieter moments from other, older imperial traditions of elegance and aesthetics was visible everywhere. Standing outside Harajuku station one Sunday this was plain – in one direction Yoyogi-Koen Park with its teenage subculture's seeming expression of dissatisfaction with the repression of regimentation and in the other way Meiji-Jingu, one of Japan's most magnificent shrines a setting for Shinto Weddings. Some misconstrue this to be a collision; I would suggest that although they are poles apart, the Japanese manage to make them compatible. This was evident at my first Sumo tournament where the clay *dohyō* ring is raised so that the loosing competitors invariably gets pushed onto the crowd whilst the wizard-like referee jumps around, against a backdrop of the concrete *Ryogoku Kokugikan* stadium under the scrutiny of all the latest media technology.

There were many different faces to Japan that constantly forced me to re-evaluate my impressions. The urban crowds against the traditional defence of personal space; smoky, noisy pachinko halls and commuters reading manga comics versus the serenity of Japanese temples and the order of Japanese baths; the aggressive nationalistic black propaganda vans and the unexpected Shinto street festival. Often the underlying reasons are misunderstood or missed by tourists and so I have been exceptionally lucky to spend a period of time immersed in it trying to absorb everything.

Is Japan changing? You cannot give the full answer but I think it is, slowly. The *shinjinrui* (new people) embrace values different to those of their parents but I think still seek the norm if only after a few years of marriage. However with every generation comes more momentum for change, with particular stimulus from the elderly and women, but in Japan it always seems that the fundamentals preserve.

My IAESTE internship has changed me far more than I anticipated. It proved a fantastic opportunity to gain real practical experience with one of the world's leading Civil Engineering Contractors. It was a unique chance to see from the inside a country subject to more mistaken musings or gullible preconceptions than any. It forms a large part of my endless lesson in communication and interaction. From it I strike to take the skills I developed, the memories of the places I visited, and the warmth of the friends from many all around the world I made. I have only one regret; I managed to sleep through *all* the earthquakes!