EARTHQUAKES AND CULTURE SHOCKS

An Internship at Nissan

For my MSc. internship, I spent five months at one of Nissan's research and development (R&D) centres in Atsugi, Japan. Apart from the opportunity to work in research at an innovative and leading automotive company, I was also interested in travelling around Japan and discovering from within what the largest metropolitan area in the world has to offer. Learning a bit of Japanese and frequent earthquakes were all part of the package.

In early 2011 it was time to decide between the internship options I had found. One of the possibilities for Control and Simulation (C&S) students was five months at Nissan in Japan, arranged through Professor Max Mulder. While arranging the internship, the devastating Tohoku earthquake and resulting tsunami of March 2011 occurred which slowed down the process somewhat, however in June I was relieved to get the green light, and I started preparing for my stay in Japan. The paperwork for applying for a visa took about two months, and included filling out forms with Japanese characters and sometimes ambiguous English translations underneath. I did my internship at Nissan together with another C&S student which in hindsight was a good idea as we could both adjust to a foreign environment together. We met up with previous C&S Nissan interns to get an idea of the job and lifestyle awaiting us in Atsugi, on the outskirts of greater Tokyo. In September I caught my last glimpse through the clouds of the polders around Schiphol as I took off on the journey that would end with me in Tokyo, ready to start my internship.

NISSAN ADVANCED TECHNOLOGY CENTER

My internship was in the Driving Control Engineering Development Department with a small team of engineers performing research on human-machine systems in driving control. The department consisted of multiple groups, each focusing on a different stage in the development of vehicles with new technologies. Even though this was a research team working on technology which is still a few years away from implementation in products, I was pleased to see that the benefit of the technology to the customer is always kept in mind. The tasks I carried out as an intern involved designing, conducting and analysing experiments using a driving simulator. My education at Control and Simulation allowed me to quickly comprehend the type of analysis required there. MATLAB skills developed over years of projects and assignments at Delft certainly came in handy at Nissan, and it was satisfying to finally apply the knowledge gained during my university to real life situations. The R&D facilities, such as equipment and proving grounds, were amazing to see and experience.

LANGUAGE

The work environment was basically Japanese, although documents were translated and explained to me in English. Before I left for Japan I had flicked through a few Japanese textbooks without much success, but once I was there it became a lot easier. During my lunch breaks I taught myself one of the kana scripts before starting Japanese lessons in the week-ends, however four months of lessons is nowhere near enough Japanese to start discussing engineering topics! Learning the simple phonetic kana scripts is good for being able to spell out names of places
and products in daily life, even though train stations all have Romanized signs. The most often used kanji characters even began to stick after a while. Even some English used in daily life in Japan was foreign to me, such as calling apartment buildings ‘mansions’ or using the acronym ‘NG’ (not good) as the opposite of OK.

**LIFE IN JAPAN**

The trip from Narita airport to Atsugi takes three hours by bus and passes through the Tokyo metropolis from one side to the other. The first glimpse of Tokyo as you drive along double decker highways built above rivers makes the size of the immense conglomeration clear; there are buildings stretching to the horizon all the way around you. Later you start to identify the separate centres of activity in Tokyo, each with their own atmosphere. It is awesome to stand on the observation deck of a skyscraper and marvel at the landmark buildings and parks you have been to, all with the backdrop of Mt. Fuji. Winter weather in Tokyo is generally dry and clear, so on most days I could also see the peak from my dormitory window.

On the first day my colleagues met me at the bus station, and we drove to the company dormitory for employees who have just moved to the area. I was set up with a public transport card (which works much like the Dutch OV card) and was told which bus I should be on the next morn-

The controls of the washing machine and air conditioner were explained, however even with a technical background, controlling the air conditioner with a remote containing a dozen buttons labelled in Japanese was often a case of trial and error.

The food is probably one of the first things you need to get accustomed to in a new country. In Japan most meals, even breakfast, come with soup and a rice bowl. In the five months I was there, chopsticks became so natural they felt like an extension of my fingers. Getting groceries at a supermarket is also an adventure when you do not recognise half the products; bread, for example, comes in packets of eight thick white slices. The cost of living is considerably higher in Japan than in the Netherlands and prices for weird foreign delicacies such as peanut butter were sky high.

An earthquake would strike about once a week. The slow rolling ones felt as if you were dizzy, while the sharp sudden ones were a lot worse. In the larger earthquakes, the dormitory creaking acted as a warning sign before you actually felt it, while I hardly felt any at work as the building was so new that it had all the latest shock absorbing structures. Most of the time it is over in a few seconds, you sometimes check where the location of the epicentre is online and then get back to normal life.

Nevertheless, everyone has civil defence alarms on their mobiles, in urban areas, and in buildings which give a warning for large approaching earthquakes.

**TRAVEL**

During my time in Japan I visited different parts of the country. In Sendai which was close to the epicentre of the March 2011 earthquake I saw the damage the tsunami had caused. Although nine months later most of the debris had been cleaned up, the odd wrecked car was still left in the rice fields, while only the concrete foundations were left of the houses near the beach. During the New Year’s holidays I did a multiple day train trip to Sapporo via the snow covered west coast and back down the east coast. I also spent a weekend in Hiroshima, and at the end of winter I went skiing with colleagues in Nagano, a great area to learn the basics. Amongst all the longer distance travel there were also plenty of opportunities to explore Tokyo, which was only one hour away by train.

**BACK IN DELFT**

Now ready to start my thesis work, I can certainly say that my time in Japan has opened my eyes to its culture and society in a way that would not have been possible even if I was transferred there later in life. The work at Nissan was interesting and a natural extension to the courses I have followed in the C&S department.