peikko group 50 years 1965-2015

50th Anniversary Publication

AN INCREDIBLE JOURNEY OF 50 YEARS

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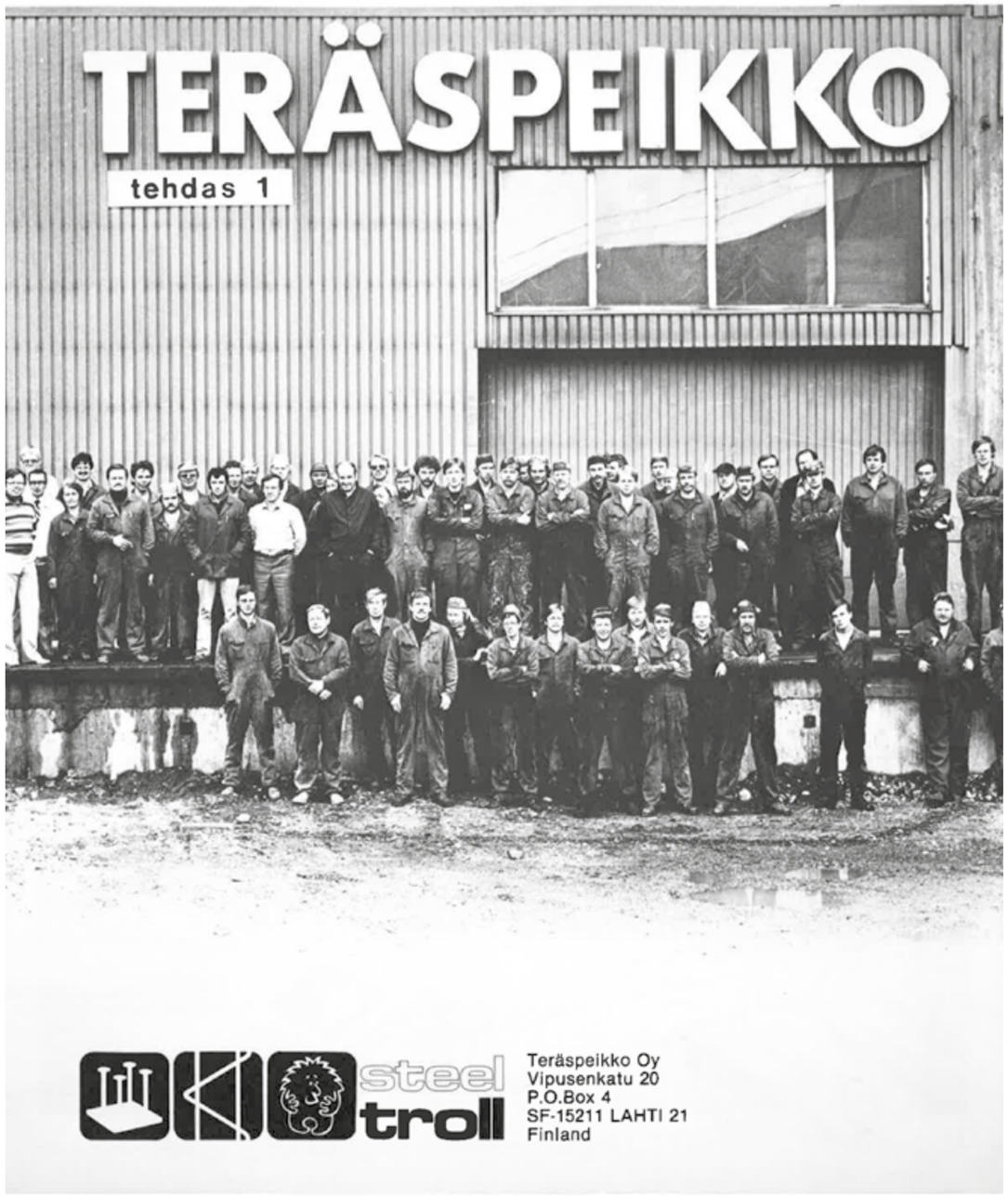


AN INCREDIBLE JOURNEY OF 50 YEARS

Text: Reeta Paakkinen

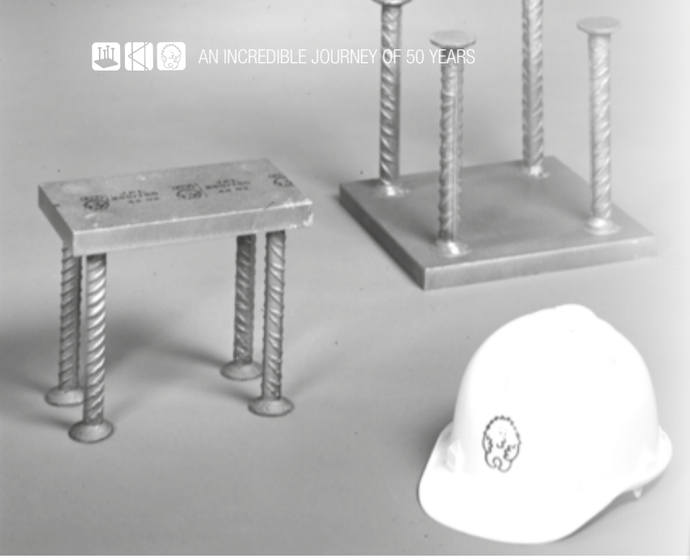
The driving force keeping Peikko growing since 1965 has been our dedication to developing strong products, listening to our customers and maintaining a humble, honest and hard-working attitude to doing business, says Jalo Paananen, the founder of Peikko.

Peikko Group, which turns 50 years in 2015, was initially a small-scale project Paananen kicked off in late 1964. “I was working at the sales department of a Finnish steel factory and visiting a construction site where they were using precast elements. My customer, a precast element factory, noted that no one in Finland was manufacturing a product that would tie together two plates of concrete. I realized the potential of such a product, and said I would straight away discuss the idea with an engineer I knew,” Paananen says. Jalo Paananen and M.Sc.Eng. **Osmo Norvasto** promptly decided to take up the challenge and develop a product matching the needs of the precast element factory. “We discussed the issue and felt so inspired and certain that the product would sell. The end result of this was Diagonal Tie product.”

The details of Peikko’s launch sound both homely and courageous, in addition to being adventurous. Paananen and Norvasto established a company, **Teräspeikko**, in the spring of 1965 and established their manufacturing process in a barn. Only one person was working on manufacturing the products. The first order – 500 pieces of Diagonal Ties, were delivered to the customer just a few months later.

At first, Paananen focused on Teräspeikko during his weekends as he kept his job at the sales department of the steel factory.

“Paananen and Norvasto established a company, Teräspeikko, in the spring of 1965 and established their manufacturing process in a barn.”



"I had every other Saturday off and then I would visit precast element factories around Finland. I prepared my marketing round by contacting the customers by letter and requested for a meeting. I spent my summer holiday in 1965 visiting factories. My wife and our newborn would accompany me and tour around the town in the meanwhile."

Norvasto and Paananen had been right - orders started coming in straight from the start. By fall 1965, Teräspeikko had employed three people full-time and become a company free of debt. **Lasse Helander**, a friend of Jalo Paananen from his study times, had joined the two men. He took up the responsibility for the production.

"Our first order was the equivalent of an average worker's salary of three months. But business picked up immediately and orders kept coming in. We, however, still had very small framework for the business. For example, at the shed workshop, we did not even have a telephone line because it would have been so expensive to connect. So we used my home telephone where my wife answered and wrote down the orders," Jalo Paananen remembers.

"Our first order was the equivalent of an average worker's salary of three months. "

In the summer of 1966, one year after the establishment of the company, Paananen quit his other job, and took up the management of Teräspeikko full-time.

The next development in Teräspeikko's product range took place in late 1960s, when Paananen created a standardized Fastening Plate for concrete constructions, a simple product that allowed welding on concrete. "A construction company asked me if I would like to develop standardized Fastening Plates for precast elements. Of course, I said 'of course', and started visiting precast element factories and gathering information with the goal of developing a product range that was needed in the market." The end result of this work was a range of fifteen new products.

After the first ten years of Teräspeikko, Paananen bought out the two other stock owners of the company Osmo Norvasto and

The designer of the logo, Juha Tolvanen back in 1967.

Teräspeikko personnel in 1973:
Back row from left: Antero Lahnalampi, Lasse Helander, Sauli Tontti, Olavi Airola, Jalo Paananen and Pentti Aronen.
Front row from left: Aulis Mäkinen, Taimi Dufva, Tuula Mikkola, Leena Kopperi and Jorma Valjenti.

Lasse Helander. "Our team had worked so well together. Without these two men, Peikko would not exist today. But we had reached new milestones and agreed it was time to restructure the company."

Jalo Paananen left the management of Peikko to others since the 1970's. Peikko was one of his many companies, and Paananen decided it would be better off with a management team that could focus on the development of the company full-time. Paananen, however, continued leading Peikko's Board of Directors, and was closely involved in decision-making process on the development of the company. "I have always thought trusting the daily management is of utmost importance for smooth operation of the company. Another lasting principle we have had throughout, is that we listen to the market and the needs of our customers", Paananen concludes.

Despite having retired in 2005, Jalo Paananen still follows events at Peikko, and he can often be seen visiting the head office at Lahti. He is keen to note the importance of team work, cooperation and good atmosphere within the company, which he calls "the Peikko Spirit". It is an atmosphere of making things happen together. "You cannot maintain a successful business for years if you forget that customers and consumers are those who keep your business alive. Too many businesses in this world lose their leading positions because they become so focused on themselves. But success is something that depends on customers and the image you give of yourself. This is my lesson for future generations. Being humble and easy to reach, always focused on your core business, dedicated to product development and listening to your customers is what keeps a company going."

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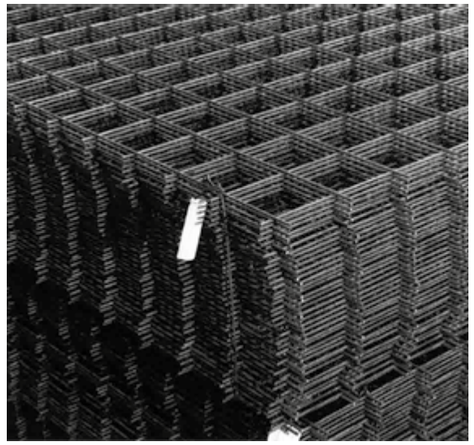


Topi Paananen and Raimo Lehtinen built an international sales and manufacturing network for Peikko.

NEW GENERATION TURNS PEIKKO INTO A WORLD CITIZEN

Topi Paananen, the second son of Jalo Paananen, took over the management of Peikko from his father Jalo Paananen in 2005. He had initially joined Peikko's Board of Directors in 2000. "I had, of course, followed the development of Peikko since childhood, but when I started working for one other family company in the summer 2000, I also joined Peikko's Board. This gave me an insider's insight to the company, and led me to take up a full time position at the company in August 2005," Topi Paananen says.

Topi Paananen decided to join the daily running of Peikko when he saw that the fairly small company had enormous international growth potential. "I sensed the opportunity and possibilities outside Finland. First steps of exports and internationalization had already been successfully taken by **Raimo Lehtinen** and his team in the 1990s so the vision was there. But further expansion overseas was only a question of execution," Topi Paananen says.

Paananen started to work as the right hand of Raimo Lehtinen with the task of building an international sales and manufacturing network for Peikko. "My first projects in summer and autumn 2005 included taking our German workshop fully into our own hands, starting manufacturing in Slovakia and acquiring a small steel structure factory in Lithuania. These made up our European factory network, which was at place already in January 2006. At the same time, we took action to launch more than ten own sales units overseas within the next twelve months. Growth pace then was very ambitious and we were full of enthusiasm," Paananen describes.

"At times the speed of expansion between years 2005–2008 was really fast. But today we are benefiting a lot from the decisions made during those hectic years."

Looking back now, Topi Paananen admits that at times the pace of growth was so fast it was even slightly crazy. Today, the company is five times bigger than it was just ten years ago in terms of turnover. "At times the speed of expansion between years 2005–2008 was really fast. But today we are benefiting a lot from the decisions made during those hectic years," Paananen notes.

The past decade has also been a major educational experience for everyone at Peikko, Paananen notes. "Running international business is not necessary so much different than running a local business. But different cultures that one comes across every single day at work, do bring a certain touch of complexity and a challenge to doing business. And these kinds of challenges are always fun - one can never actually learn to manoeuvre in all business cultures," Paananen says. He is also keen to emphasize the massively important role team working at Peikko has had at this development. "Peikko is not at all a one-man-show. It is teamwork effort by more than 1,200 professionals around the world," Paananen says and adds: "It is so rewarding to see that our employees have been able to grow to major job tasks during my time, that we have been able to serve so interesting customers in so different kind of locations, and develop lasting relationships, how much our scale and knowhow of operations has grown. It has been a great journey of ten years, and I believe that the best things are still ahead of us."

THE COLUMN CONNECTION

Raimo Lehtinen, who joined Peikko in 1989 as Research & Development Engineer, initially focused on developing the company's Column Connection products. Lehtinen had come across Peikko's Column Shoes already as an engineering student at the Otaniemi Technical University and noted they were, already then considered the ideal, standardized way to adjoin concrete elements together. "In 1983, I was working on a project at the university focusing on the use of concrete elements and I had to make a structural design for a hall made of concrete columns and slabs. I asked our departmental assistant how the structures could be attached together. He fetched me Peikko's orange colour product catalogue and said 'have a look at this'. Back then, I had no idea I would end up at the firm, but when the opportunity came up in 1989, I was very enthusiastic to join the company."

"We needed a product that we could sell abroad as well, a so-called spearhead, for our export business"

During his first four years at Peikko, Lehtinen developed Peikko's Column Connection products into the Column Shoe, which became Peikko's first spearhead product in its conquest of new markets. "During economic slowdown in the early 1990s, we noted that fluctuations in domestic markets could affect the company too much, so we decided to spread our activities and diversify overseas. For this, we needed a product that we could sell abroad as well, a so-called spearhead, for our export business," Lehtinen explains.

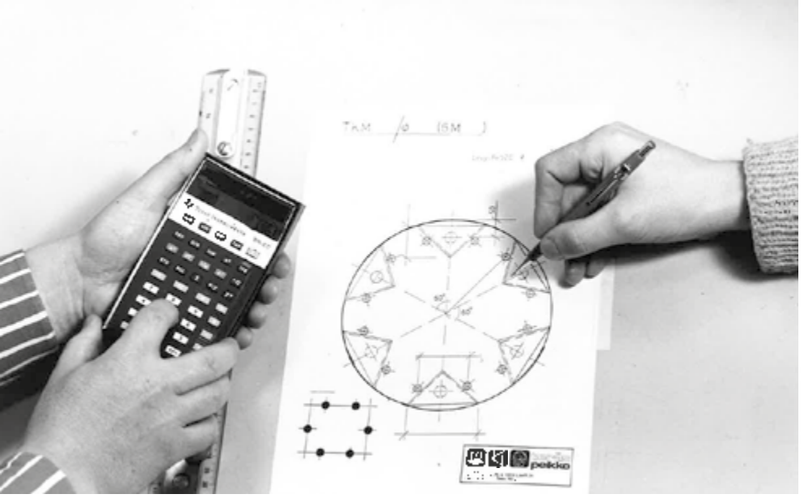
This product came to be Peikko's Column Connection. "When we started developing the Column Connection in 1989, the first generation of the product was already available in the Finnish market. This solution was not very ideal and because of that, other solutions like socket foundations were widely used. However, with socket foundations, erecting concrete columns was slow and difficult, and not so safe either. At the same time, regulations on the composition of concrete elements changed and higher concrete strengths were taken into use – as a result Peikko's old Column Shoes as they were, no longer fitted inside columns. So there were several things we needed to change and update," Lehtinen says.

With the new version of Column Connection, construction process became four times faster than with other solutions in the market. Work at the precast element factory also became simpler and safer. It became possible to calculate the bolt connection exactly and make detailed, concrete plans for erecting the columns. The steel contents of the Column Shoe also increased, but their size reduced and so the product could be fitted in smaller columns than before. "All in all the change was massive," Lehtinen describes.

SHOES TAKE ONE STEP FURTHER

Jorma Kinnunen, Senior Manager, R&D at Peikko Group, developed the current HPKM Column Shoe product one step further.

Jorma Kinnunen, Senior Manager, R&D.



Cem Özer, Lorenzo Bianco, Topi Paananen and Miikka Toivola.

Christian Gerke and Kari Tuominen.

"There were certain new building material regulations and EN-design standards that we had to take into account when developing the product. The concrete cover of the HPKM Column Shoe, for example, was increased, strengthened due to new regulations. From customer perspective, this increased the life-cycle of the product. The Column Shoe became usable in more demanding environments like metal industry manufacturing premises, where chemicals and acids can leak on the floor, and where the thicker concrete cover would protect the Column Shoe from exactly this," Kinnunen says.

The improved version of Peikko's Column Connection was an international success. "We started selling the product country by country and sales volume just kept increasing and does so also today. Nowadays, our factories manufacture more than 300,000 Column Shoes a year, and Column Connections are being sold all over the world," Kinnunen notes.

The new product succeeded in convincing many of its sceptics. An example of a customer converting from older construction style to using Peikko's Column Shoes was one Spanish construction company, which had initially calculated, using conservative methods, that erecting the large precast frame of the building it was constructing would take forty days. "The director of the factory had banned the use of Peikko's products where it is not completely necessary. But the designer of the building had disregarded his comments and had designed the whole building using Peikko's connections. The owner wasn't aware of this. Erecting the precast frame of the building took ten days, after which the team called the owner and asked what they could do next. The owner, of course, comprehended the customer benefit and the difference this made in a large project, and this time ordered that only Peikko's products could be used in his future projects," Kinnunen remembers. And there are lots of similar stories from around the world.

"Nowadays, our factories manufacture more than 300,000 Column Shoes a year, and Column Connections are being sold all over the world."

THE MILESTONE OF TECHNICAL APPROVALS

An important milestone in the marketing of Column Connections was getting them technical international approvals in the 2000s. Peikko applied for European Technical Approval (ETA) for its product in early 2000, which was received in 2013 after several delays that derived from changes in legislation. Today, all Peikko's core products have ETA approval and CE marking, as well as national approvals of different countries. The company focuses on actively keeping pace with the development of building material and design standards worldwide.

International approvals have always been important to Peikko, says Kinnunen, who oversaw the process and focuses on international standardization at Peikko today. Initially, Peikko had the local Finnish approvals for Peikko Column Shoes and Anchor Bolts, after which it gained approvals in Sweden, Germany and Poland. "Getting local approvals for each product you want to market is the only way to enter a new market, so that is where we started in the late 1990s. In Germany, for example, we could not have even operated without first getting national technical approvals for our products. Potential customers would always first ask if we had already done with our paperwork. We follow the development of building and design standards very closely. It is a demanding task as such. We operate in many countries, but want to match local demands wherever we go," Kinnunen explains.

"We operate in many countries, but want to match local demands wherever we go."

INTO GERMANY

One of the first foreign markets where Peikko products started to be sold was Germany. Peikko entered the market in 1992. Construction projects in the local paper industry were often designed by Nordic engineering offices, which included Peikko's products in their plans. The first major project, where Peikko's Column Connections were used, was a paper mill project of company SCA in Mannheim, which helped to open more doors in Germany.

Engineer **Christian Gerke**, Managing Director of Peikko Germany, notes that when Column Connection was introduced in the German market, there were no competitors in the field – but also very little awareness of the product. "Existing market players would even make suspicious, sarcastic comments regarding Column Connections at the first industrial fairs we participated in. Building business in Germany was and is still conservative. A lot of trust is placed in an old-fashioned way of working which tends to view new systems with scepticism. This is the approach especially if the new products come from Nordic Countries and are not able to show references in Germany or in its vicinity. But when our success increased, and we became more known in Germany with a track record, that mindset changed," Gerke says.

In the past 20 years Peikko's products in Germany have been used in numerous different kinds of projects. These include, for example, the sports arenas for World Championship in 2006 - Stadion Köln Müngersdorf and Stadion Mönchengladbach, office and shopping premises projects Frankfurt Air Rail terminal the Squaire and Riem Arcaden in Munich, as well as the retail premises of Swedish furniture giant IKEA in Dortmund.

EXPANSION TO THE MEDITERRANEAN

Peikko's team in Germany played the key role in Peikko's expansion to Italy in 1999, where Peikko's Column Connections were used for the first time in a paper mill project at Burgo. "Peikko Germany was able to convince an engineering company

Using Peikko's Column Shoes makes the erecting of a precast frame much faster.

Peikko Group's HPKM Column Shoe Connection has been granted the European Technical Approval ETA-13/0603. The approval has been granted by VTT Expert Services Ltd and is based on extensive and demanding tests of precast column connections.

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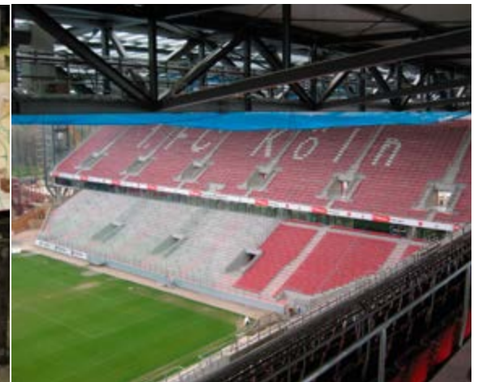

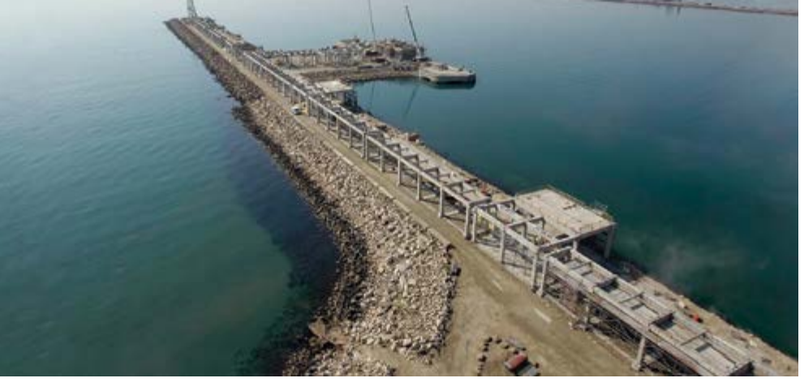

A memorable project of Peikko Italy was a pipe rack built in an LNG-terminal in the South of France. It was designed and constructed by an Italian precaster, using Peikko's connections for column foundation and beam-column joints.

Oksakowski Ingenieure to use Peikko's Column Connections in this big paper mill project," **Lorenzo Bianco**, Managing Director of Peikko Italy, remembers. "Back then, there were no competitors in Italy in the Column Connection market. The main alternative to Peikko's solution were socket foundations. But because Peikko's products enabled reducing foundation height, and building close to existing buildings, with standard items, they were received very well and business in Italy picked up rapidly."

In Italy, the numerous memorable projects include an office building in Torino, which was built using 31 meter tall precast columns erected on a 1.5 meters thick foundation. Another memorable project of Peikko Italy was a pipe rack built in an LNG-terminal in the South of France. It was designed and constructed by an Italian precaster, using Peikko's connections for column foundation and beam-column joints.

EARTHQUAKE ENGINEERING

The CE marking of Peikko's Column Connection opened new possibilities on the Italian market, but over the past decade Peikko has started focusing also on developing the application of Column Connection in seismic areas, which will give it stronger foothold in countries with earthquake risk.

Peikko started researching the seismic behaviour of Column Shoe connections in 2007. The first tests were conducted in the European Research Centre of Earthquake Engineering in Pavia, Italy. Since then, Peikko has invested notable sums in numerous static, cyclic and dynamic tests in laboratories in Italy, Greece, Spain and China. Today, Peikko has an internal department within its R&D team, which focuses solely on developing products that can resist extreme loadings such as earthquakes and explosions. Columns, concrete walls and moment resisting frames are loaded till collapse according to the testing protocols found in the international codes such as the ACI and the Eurocodes. In most cases, the tested specimens are compared with equivalent cast in place ones in terms of strength, stiffness, ductility and energy dissipation.

"Peikko helped the designers to satisfy seismic design demands and provided to clients safe and reliable solutions."

"Italy being an earthquake-prone country, with certain areas having the expected peak ground acceleration close to 0.4g, forces designers to take also seismic forces into account in the design process of connections," says **Elena Camnasio**, Ph.D. and R&D Engineer working for Peikko in Italy.

Aristidis Iliopoulos, Ph.D. and R&D Manager, giving a speach on seismic connections at the BetonTage in China in 2014.

Elena Camnasio, Ph.D. and R&D Engineer, following Peikko's testing on connections for seismic applications.

Bolted connections consisting of Column Shoes and Anchor Bolts represent more than half of the invoicing of Peikko Italy, and have been adopted in many projects all over the country. Peikko helped the designers to satisfy seismic design demands and provided to clients safe and reliable solutions. For example, Peikko supplied Anchor Bolts and Column Shoes for 185 precast buildings in the so called C.A.S.E project, which aimed to reconstruct a residential area after the disruption of the L'Aquila earthquake in 2009. In Italy, bolted connections are mainly adopted in industrial buildings, car parks and warehouses.

At the moment Peikko Italy is involved in the project of a huge store in Brescia, Northern Italy, where 800 precast columns will be used. "In the future, the new generation of column-to-foundation connections will allow the clients to rely on the ductility of the connection itself, which is extremely important when designing in a seismic area, and is cost-effective compared to traditional solutions," Camnasio notes.

NEW GENERATION COLUMN SHOE

Aristidis Iliopoulos, Ph.D. and R&D Manager working for Peikko in Greece, says Peikko is releasing a new generation Column Shoe connections, specially designed for earthquake-prone areas with modified anchor bolts and special reinforcing details, within a year. The Column Shoe connection was compared experimentally with equivalent cast in place solutions and demonstrated an equivalent and in some cases superior cyclic behaviour. "The scope of Peikko's new solution is to offer to the construction industry a safe precast concrete joint capable of developing high values of ductility and energy dissipation during strong earthquake excitations. From constructional point of view, the new connection will be similar to the conventional one by keeping its good characteristics such us speed of erection and ease of use," Iliopoulos says.

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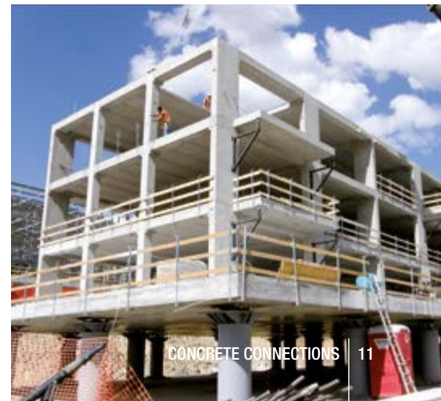
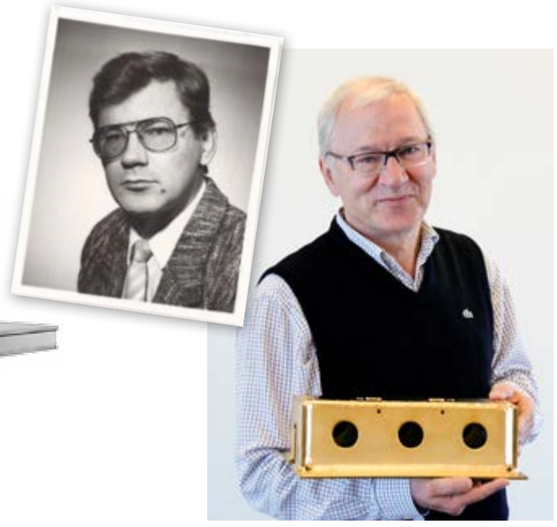




Jorma Kyckling the inventor of the DELTABEAM®.

DELTABEAM® – THE ULTIMATE COMPOSITE BEAM

DELTABEAM®, another spearhead product of Peikko's growth was developed in the late 1980s by **Jorma Kyckling**, Managing Director of Peikko at that time and his team. "In 1988, we were having a meeting on product development with Jalo Paananen, where I mentioned that a concrete construction company had said they were looking for a high quality, fire resistant composite beam product. Jalo Paananen got enthusiastic about the idea and we decided to set up a work group to develop it. By the end of the year, we had a detailed plan, and in 1990 Peikko invested in launching the manufacture of the new product," Kyckling explains. Kyckling remembers vividly a moment from FinnBuild fair in Helsinki in 1990, where Peikko had put on show a small, plastic prototype model of DELTABEAM®. "One architect looked at the product, took it to his hands and shook it. He then shook his head and said to himself 'why on earth haven't I been told about this product before!' At that point I realised DELTABEAM® would have massive market potential."

The product was developed further by **Kari Tuominen**, who ran Peikko's R&D team at the time. Currently, Tuominen is Business Director of Peikko's Wind Turbine Foundation Technology. "We decided to develop a process without size limitations, by making numerous, different kind of variations of the beam, which would serve all kinds situations," Tuominen says.

Effectiveness of the DELTABEAM® increased, whilst the potential of errors dropped radically. Time spent on design process was also reduced. The updated DELTABEAM® required new premises for production, which were built in Lahti next to the headquarters of the company. "Manufacturing process at our new factory, opened in 2002, changed from manual to automatic as we got computers to monitor the production line. The new premises, new technology and new products became a model which partly were imported also to Slovakia in 2007–2008," Tuominen notes.

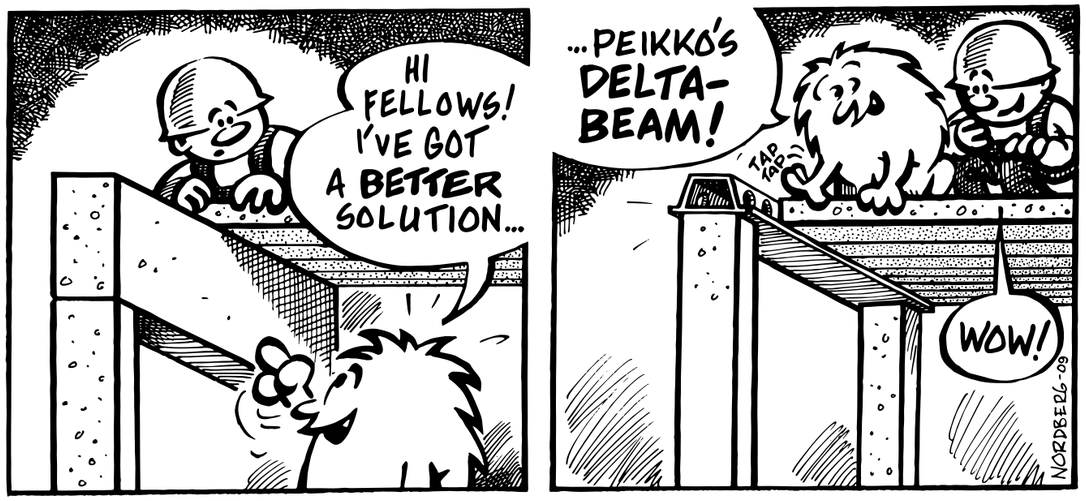
"One architect looked at the DELTABEAM® prototype, took it to his hands and shook it. He then shook his head and said to himself 'why on earth haven't I been told about this product before!"

The DELTABEAM® was developed further by Kari Tuominen, who ran Peikko's R&D team at the time.

GREEN FIELDS OF SLOVAKIA

In 2008, Peikko started manufacturing DELTABEAM® Composite Beams in Slovakia. The company had started manufacturing other products in older factory premises in Kralova nad Vahom already in 2005, In 2007–2008 it made a EUR 9 Million greenfield investment in a new production facility in the same community. **Michal Horak**, who was back then Managing Director of Peikko in Slovakia, says Peikko had then limited experience of working outside Finland. "That was really the main challenge along the road. But as a learning experience investing in a greenfield manufacturing site in Slovakia, was very useful. We have applied our experience, repeated parts of it later in China, where the Slovakian footprint is quite obvious."

At first the new Kralova nad Vahom factory produced only DELTABEAM® Composite Beams, but with time, product range was expanded, and today includes all Peikko's products. From the beginning, the factory delivered products to demanding projects in Central and South Europe. The first most challenging was the Frankfurt Air Rail project the Squaire which started in 2008, and where Peikko delivered 11 kilometers of DELTABEAM®s. Logistics and very limited time to deliver the goods to the construction site, made the project particularly challenging. In 2008 Kralova nad Vahom factory got involved in another similarly demanding project, a hotel in Crete, where it delivered the longest and heaviest beams ever. "That was an order of 23 metres long beams which we made in three different parts. Logistics was again difficult as we had only ten minutes to load off the product to the site. But these challenges taught us so much in the early stages of Slovakia factory," Horak says.



In 2008 Kralova nad Vahom factory got involved in a demanding project, a hotel in Crete, where it delivered the longest and heaviest beams ever. 23 meters long beams were made in three different parts.

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The investment in Kralova nad Vahom factory was initially calculated to pay itself off in approximately 10-15 years. "Looking back, the initial factory investments have already been paid back, but investments into the country still continue," Horak points out.

DELTABEAM® EXPANDS TO EUROPEAN MARKETS

Slovakian greenfield project was part of Peikko's new strategy, which Topi Paananen had drafted in 2005. Becoming the CEO of Peikko's international operations, Topi Paananen decided he would pursue an ambitious, energetic expansion plan, and so within a few years only Peikko, which had consisted of four subsidiary companies in Peikko Group, increased rapidly to some twenty companies.

In each new country, Peikko decided promote the product that would break into the market most successfully in local conditions. "In Spain this was the Column Connection, in Denmark the DELTABEAM®. Construction industries vary from one market to another massively. Every country has their own culture of doing things. It is easy to understand designers in different countries, but it is more challenging to understand the whole market itself," **Miikka Toivola**, Business Director for Composite Structures at Peikko, notes.

Part of the international expansion plan was the establishment of Peikko Denmark. Peikko had been exporting to Sweden and Norway, when it entered the Danish market in early 2000. A subsidiary there was established in the summer of 2006. "We saw over a few years, that there was immense potential to sell more in Denmark, but that we would definitely need a local to run the business," Toivola says. This local turned out to be **Jonas Høg**, currently Managing Director of Peikko Denmark, who had cooperated with Toivola launching the Danish subsidiary. Høg says promoting DELTABEAM® to designers and engineers had slowly opened the doors to the Danish market. "First projects with DELTABEAM® were sold in Denmark in 2000. Sales volume was, however, limited to a few projects, and the sales transactions were handled by Peikko Finland at that time. After 2006, when we got our own legal entity, business started really picking up."

Today competition in the Danish construction industry, according to Høg, is rather demanding. "There are other suppliers and manufactures of composite beams in the market, and the solution of a composite beam for slim floor structures,

Jonas Høg says promoting DELTABEAM® to designers and engineers had slowly opened the doors to the Danish market.

Construction industries vary from one market to another massively, notes Miikka Toivola.

Dominic Lemieux in Peikko Canada's warehouse in 2007.

is quite popular in the Danish building industry. From the beginning, Peikko Denmark has focused on design offices in Denmark, and we have spent a lot of time and resources supporting and teaching the designing engineers about the advantages of the DELTABEAM® and the other Peikko solutions. Today, many Danish engineering offices are able to design their projects with DELTABEAM® from the very first phase, and that is a great situation for Peikko."

ACROSS THE ATLANTIC

The following year, 2007, it was time to expand to North America. There also, Peikko's leading product was initially DELTABEAM®. **Dominic Lemieux**, Managing Director of Peikko Canada, says that the early years of Peikko Canada were particularly challenging. "One of the most fundamental differences between Peikko in Europe and Peikko in Canada is that in Europe Peikko is a strong manufacturing company that evolved to produce great products. When we started in Canada, we had the products, but no manufacturing capacity. What is a production plant located at 6,000 kilometers from your office really worth for custom products that have to be delivered on time to a construction site? We were stuck with the old chicken or the egg problem here, trying to develop sales at the same time as ramping up production," Lemieux explains.

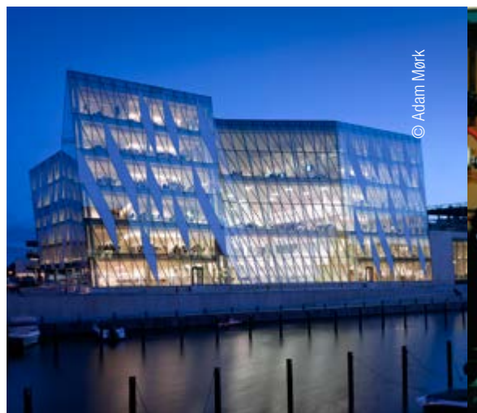
In the early stages, Peikko Canada sold two projects where DELTABEAM® Composite Beams came from Europe. "You can just imagine the challenge on the sales side. Here is a new product in a new market. You are the first one to use it, and it's critical in your construction schedule - and it will be delivered from Finland by sea freight just in time at your jobsite. Still today I sometimes wonder how two people actually committed to that. But it happened and worked out, a sign of the Peikko Spirit."

Peikko then started producing its own beams in Canada, and eventually outsourced production to three manufacturing partners. The strategic decision allowed Peikko to focus on sales. "We are now approaching the 100 DELTABEAM® project mark in Canada and our team is very capable of handling many large projects at the same time. We now spend much more time serving our clients for technical questions and project coordination," Lemieux says.

"We were stuck with the old chicken or the egg problem here, trying to develop sales at the same time as ramping up production!"

In Canada, many of Peikko's projects have been for residential applications. The main reason why DELTABEAM® is used for residential application is the flexibility it gives for unit layouts. This is particularly important for high rise construction, says Lemieux. "When the developer begins construction it doesn't know yet exactly how many units the tower will have or what the clients will want in terms of layout. They want to keep as many options open as possible to avoid the risk of having unsold units once the project is completed. In other words, they can adapt to the demand as they build. Some clients will ask for a quarter of the floor, others half and some will take the full floor. This simply can't be done if the entire tower is built with load bearing concrete walls."

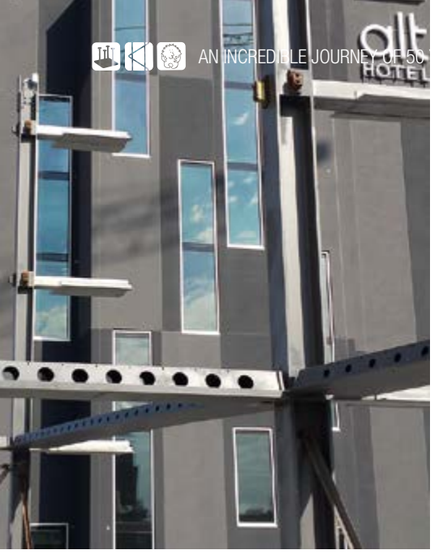
Peikko Denmark has focused to the desing offices in Denmark.
Saxo Bank, Odense Havn and OUH Patient Hotel have build using DELTABEAM® Composite Beams.



© Adam Mørk

New DELTABEAM® factory openig event in Lahti, Finland, 2002.

Dominic Lemieux tells that selling was hard in start when DELTEABEAM® was delivered from Europe.



One of the biggest projects so far for Peikko Canada, has been the order of 1.9 kilometers of DELTABEAM® Composite Beams and PCs Corbel Systems to a residential project Glasshouse in Winnipeg.

Topi Laiho and Trent Davis developed new high quality flooring solution TERAJOINT Free Movement Joints.

According to Lemieux, the market segments where Peikko has been strong historically in Europe are struggling in Canada. “Both the office and retail sector are facing new challenges. Shared open offices, working from home offices, and endless online shopping possibilities seems to be a rising trend. At the end of the day you can work and shop from your couch but you still need a place to live. This is why I think the residential demand is not about to go down.”

One of the biggest projects so far for Peikko Canada, has been the order of 1.9 kilometers of DELTABEAM® Composite Beams and PCs Corbel Systems to a residential project Glasshouse in Winnipeg. The building, which will be the highest steel structure so far using DELTABEAM®, is expected to be finished in 2016. “In this project, the advantages of DELTABEAM® proved yet again very important. The structure leaves the hollow-core slabs unexposed, so the painted, flat bottom flange of DELTABEAM® makes it possible to leave also the beam unexposed. The cantilevers of the building could be easily made by using the in-built formwork of the beam allowing fast and easy concrete casting. As DELTABEAM® has integrated fire protection, the fact was appreciated that no additional fire proofing is required on site,” says Lemieux.

Miikka Toivola thinks there is still plenty of potential to grow DELTABEAM® sales in Europe. “DELTABEAM® has a well-established market position in the Nordic region. The change from cast-in-situ constructions to precast will create more opportunities in the rest of the Europe, too,” Toivola believes. “Countries like the UK and Germany are big building markets with a lot of future growth potential. But there a different kind of approach is necessary. In some countries it isn’t enough just to sell a beam – we need to modify our offering to DELTABEAM® Slim-Floor System to better fulfil the needs of our customers.”

DELTABEAM® has undergone several fire tests, the latest at the Underwriters Laboratory in the US, where the beam successfully achieved 1, 2, 3 and 4 hours fire ratings without any additional fire protection.

FLOORING PRODUCTS

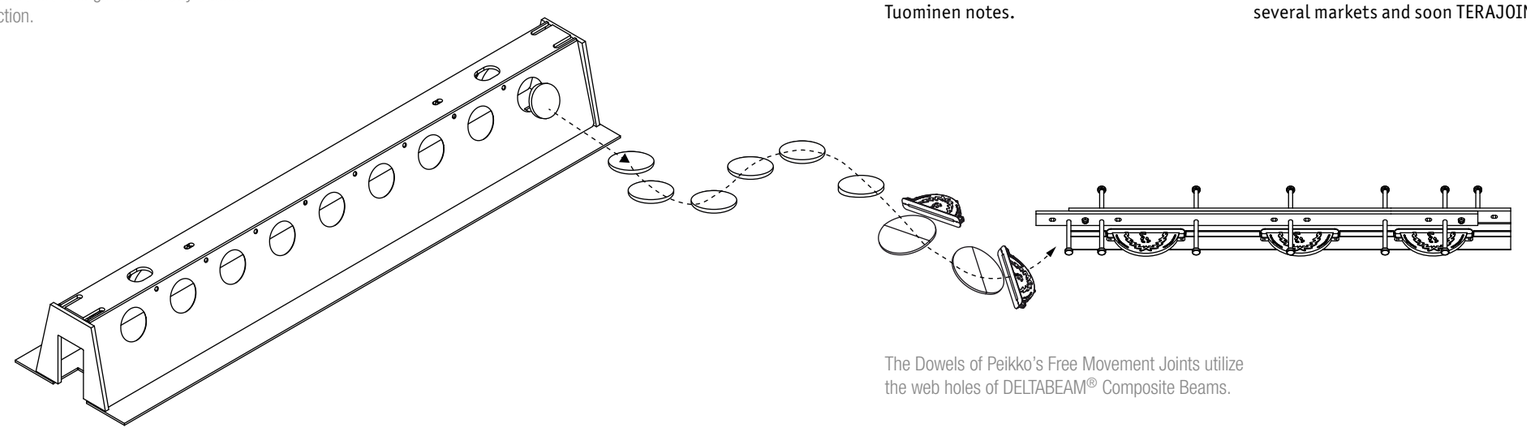
Peikko’s Flooring Products were the result of a routine brain storming session. “We were discussing what kind of products the company should orientate to, what new items would be in demand in the market. Something we do regularly as we try to keep very much in touch with industry development,” Kari Tuominen says. A colleague of his had seen a flooring solution in the United States, and the meeting discussed if the product would serve also a European audience if developed slightly further. “We noticed the potential to use the steel material of the web holes in the DELTABEAM®, which would allow them to be connected to other elements. The result of this project in 1999 became our fastest new product development and launch. Three months after LS Joint had been discussed in our internal meeting for the first time, it had already been sold to a customer,” Tuominen notes.

TERAJOINT DEVELOPED

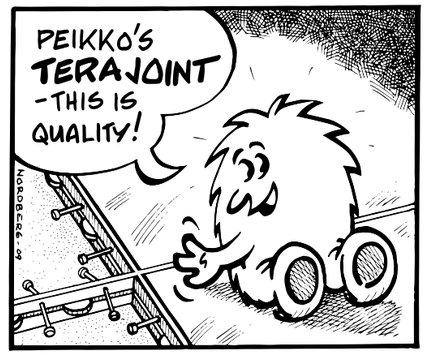
In mid-2000, Peikko’s Flooring Product range was expanded further by the development of TERAJOINT Free Movement Joints, currently the company’s leading flooring product. **Topi Laiho**, who is today Technical Manager at Peikko’s Singapore office, moved to the UK to support the launch of the group’s UK-subsidiary in 2007 and to develop new high quality flooring solutions together with **Trent Davis**, who had a strong experience in flooring product business. Whereas LS Joint had served mainly Nordic construction culture, the plan of Laiho and Davis was to develop an all-embracing product that would serve primarily European markets, but in a longer-term also any market where Peikko operates. Twelve months later, after tests at Greenwich University were completed, TERAJOINT was launched. Interested customers appeared from several markets and soon TERAJOINT had been sold in all European countries with Peikko’s presence. In the UK construction sector, TERAJOINT increased variety in the market. “Flooring products in the UK is a very niche market. We had a basic set of products, but this newcomer was a premium product, especially for industrial floorings. The new product increased and upgraded our product range,” says Laiho.

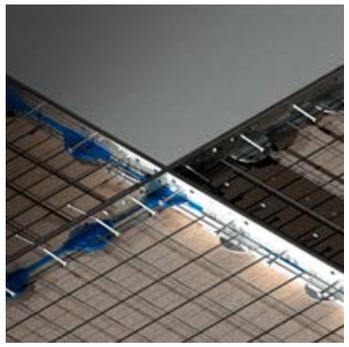
The main benefit of TERAJOINT is that it makes it possible to construct more durable, straight and better quality floors. “The requirements for floor quality have been tightened. Providing products up to very high standard is a condition for survival if a company is seriously planning to conquer more markets and complete in an international level,” Laiho adds.

When participated in the testing of flooring products in the UK, Peikko’s team noted that the commonly followed guidelines were incorrect. “In the UK, when we tested our products, we noted



The Dowels of Peikko’s Free Movement Joints utilize the web holes of DELTABEAM® Composite Beams.





The main benefit of TERAJOINT is that it makes it possible to construct more durable, straight and better quality floors.

Milan Ďurčovič and Jonas Høg.

Trent Davis is checking the results of TERAJOINT Free Movement Joint testings in UK.

the local guidelines where we based our calculations on, just did not hold. Everyone was just abiding by the rules and thought the rules were at place, but we noticed there were some errors and informed the UK Concrete Society of the discrepancies. Later many other players said they agreed, and guidelines were modified," Laiho notes.

METALSCREED ACQUISITION

Another new dimension to Peikko's flooring product business came in 2013 when Peikko acquired the UK-based flooring product specialist company Metalscreed UK Ltd. The acquisition expanded both Peikko's product range as well as customer base across Europe, **Milan Ďurčovič**, Product Manager of Flooring Products explains. Metalscreed had since 2004 developed and launched innovative, patented screed and joint products used in industrial concrete floors.

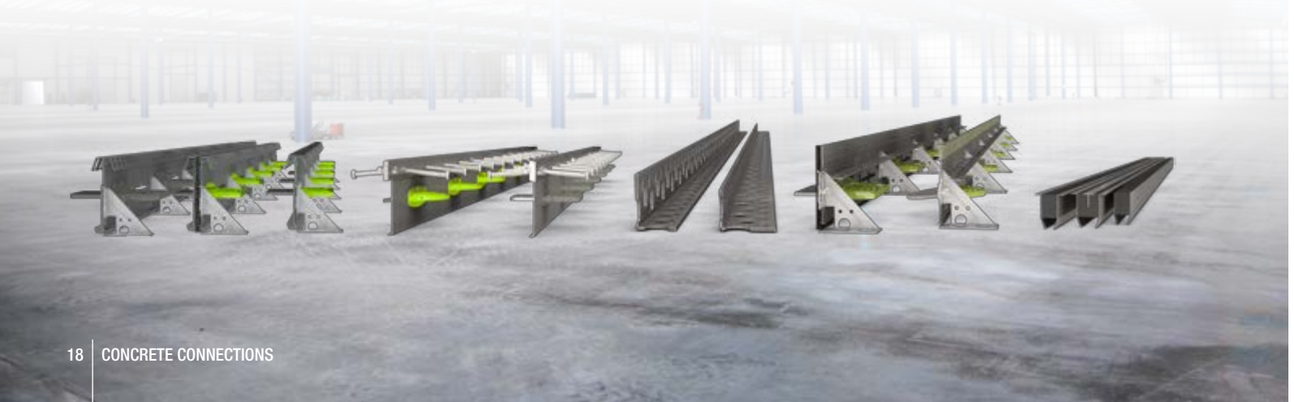
Metalscreed's current products and the patents for future products brought significant increase in Peikko´s flooring product sales in 2014. The new Peikko integrated flooring product range launched in 2014, is very comprehensive. There is a completely new category of screed rails represented by the UNIRAIL and UNIFORM Screed Rail Systems, and the METAFORM range of medium to heavy duty Free Movement Joints and Expansion Joints. The heavy-duty joint of the range TERAJOINT has been improved, and new load transfer systems have been introduced. These can currently be integrated to any floor joint category and can also be used as stand-alone products. The range of dowel cradles has also undergone a change in 2014. In addition, a new category of permanent joint fillers, the JOINTSAVER System, has been included.

OPTIMAJOINT JOINS THE RANGE

One fresh product in Peikko's flooring range is OPTIMAJOINT, the new Free Movement Heavy Duty Joint launched in the autumn of 2015. "Flooring market is generally conservative and reluctant to change, but we feel confident that once OPTIMAJOINT begins to develop a track record, sales will reflect its benefits and rise accordingly," says Milan Ďurčovič.

OPTIMAJOINT is based on the same concept as TERAJOINT, but has been designed in order to improve its' main technical features. It provides the same load transfer capabilities and improved performance in edge protection for the floor slabs as TERAJOINT. However, the main benefit is that it significantly improves the lifetime of the material handling equipment wheels, trafficking the areas where these joints are installed.

Ďurčovič explains the main focus during the development of the product has been on minimizing manufacturing costs in order to introduce a product, which could be cost competitive against any heavy duty joint system on the market. "Therefore, technology of cold forming the steel has been applied, which allows us to manufacture the components of the joint in high volumes. Assembly process of the joint has also been significantly simplified, and it is easily possible to be performed by the customer or a distributor at their own premises or on the site, without any special knowledge or equipment. This feature enables Peikko to apply new business models on flooring products, and opens up new markets for these products, where Peikko has not been active previously or where sales activities are planned to be improved. OPTIMAJOINT is a heavy duty joint, with the best cost to performance ratio of all currently offered systems," Ďurčovič says.



Celine Xu notes that customer satisfaction is the key factor to success in China. Peikko opened a sales office and launched production in China in 2011.

GOING EAST TO CHINA

Flooring Products were in an important role also when Peikko Group opened a sales office and launched production in China in 2011. **Celine Xu**, HR & Marketing Manager of Peikko APAC notes the early times were naturally challenging as the company was completely new in the market. Peikko China made its way to the market by sending samples of its products to potential customers and getting involved with local academics. "Of course, we experienced very challenging times. When we started the business in China we were new to potential customers. In the beginning we only had one sales person and that is why we decided to focus only on one most influential customer in China. We sent samples to them for trial and finally they recognized the value of our product. By acting this way, more business is gradually coming. We also received test reports for our products, for example the PD Tie, from a local famous university," Xu says.

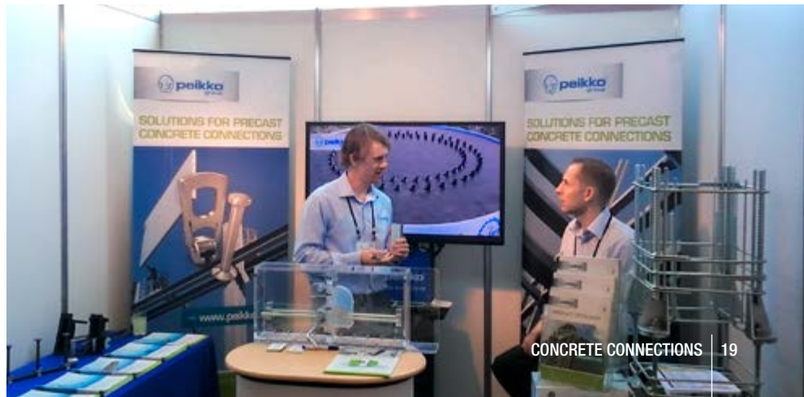
Today Peikko China now has more than 30 customers across the vast country and future growth potential seems very promising. The projects where Peikko's products have been used in China include a logistics center for Chinese e-commerce giant Alibaba, where Lifting Items and TERAJOINT Free Movement Joints were used. In 2015, Peikko China has been focusing on including its products in the national building code in China. "Competition in China is very fierce, there are many local producer and also international companies present. But customer satisfaction is the key factor to success here. We can be proud to say this is what we have achieved here," Xu notes.

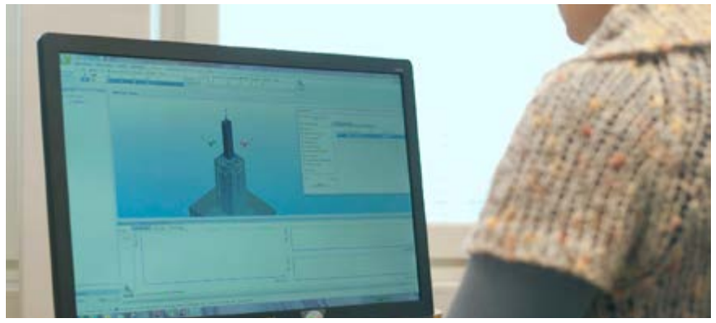
PEIKKO DOWN UNDER

Another new conquest came when Peikko Australia office opened with the leadership of Trent Davis from the UK in 2012. Flooring products were in Australia like the UK, the spearhead product of Peikko. According to Davis, Peikko's flooring products are perfectly suited to the Australian market because they are not only high quality but also cost-effective. "We also provide excellent technical support to our customers, which has helped us to become the leading player in the market for these products," Davis says. Initially Peikko focused on the Sydney area, but has since grown its customer base around the rest of Australia and now also New Zealand. Peikko Australia has supplied TERAJOINT Free Movement Joints to all of the major industrial or warehouse building companies and are now leading supplier in that field in the country. Peikko has also expanded its offering to include a broader range of products, which are also being received well as some of them are new to the local construction market. "A good example of these are Column Shoes, which have recently been designed into demountable columns for a major rail infrastructure project and solve a difficult technical problem for the customer," Davis notes.

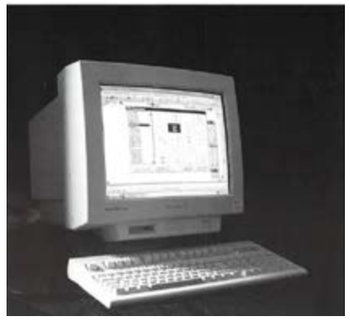
The business start in Australia has been a success, especially with the Flooring Products. "An important reason for our success was that we worked closely with a local distribution company who had extensive experience and contacts in the industry," Davies adds.

Scott Graham and Topi Laiho at the Australia Concrete 2015 event in Melbourne.





Peikko Designer® was launched in 2009. It helps to select the most suitable Peikko product for the structure in question



Peikko's products as symbol blocs for AutoCAD at the end of 1990s.

PEIKKO'S TOOLS FOR DESIGNERS

Today, Peikko offers designers software and components to support their work, including Peikko Designer®, which has reduced time spent on calculation time from weeks to a few hours. Initially, designers only had Peikko's orange product catalogue at hand. This changed in mid 1980s, when the company launched its first MS-DOS based design program. It was only available at one computer at Peikko; the one belonging to the company's main secretary, from whom people had to take an appointment in order to use the program. Then, that program was developed into PeikCol at the end of 1990s. Later from 2009 on, the same program was developed into the current Peikko Designer. "This is a huge leap from the times we were using just a paper catalogue in late 1980s," notes **Taru Leinonen**, Vice President, Research and Development of Peikko.

Taru Leinonen, Vice President, Research and Development of Peikko.

PEIKKO DESIGNER®

By 2007, we were starting to be of the opinion that our design programs needed to be updated, says Leinonen. "We realized we needed to bring our design programs up to date and came to the conclusion that we might as well create something wholly new and very modern at the same time, using the latest 3D technology," Leinonen says. "Our aim was to develop a design tool that would show the customer immediately how the structure would look like, and what the challenges in constructing it would be, how our products would work in his plan. We wanted to offer as much support in the design process as possible," Leinonen adds.

The outcome of the project was Peikko's own, free design software Peikko Designer®, launched in 2009. Peikko Designer® functions in more than ten languages.

R&D Manager, Anne Rissanen, notes Peikko Designer® is being updated and developed continuously.

With it, structural designers can easily calculate Column Connections, Punching Reinforcement and Fastening Plates. It helps to select the most suitable Peikko product for the structure in question. It checks all calculations and measurements and informs the user if the structure has enough resistance against loads and, for example, how many Anchor Bolts are necessary to keep up the columns according to the building regulations in the country where the design takes place. The print outs of the calculations fulfil the requirements of local construction authorities and design result can be transferred directly to the AutoCAD design program. Load cases can be copied from structural analysis and design software, and added to Peikko Designer®. The modern and intuitive user interface is based on interactive 3D graphics. The program updates automatically, so the designer has always the latest version in use. Overall, the program makes design process much simpler and easier, and also faster.

Anne Rissanen, R&D Manager at Peikko, notes Peikko Designer® is being updated and developed continuously by adding new modules, language versions and functions to it. "Keeping the program up to date is one of our priorities because we want to be sure that designers have the latest information available. This also encourages designers to get involved in construction projects across borders. The most recent update to the program was the addition of the U.S. building code for Punching Reinforcement design in 2015, and in 2016 we expect to launch a new version, which will include seismic specifications to Column Connection applications."

WITH NEW INNOVATIONS TO THE FUTURE

Over the years, Peikko has developed from a small company into an international player active on all continents. "All our development aims to create benefit for our customer, and thus, the entire building process. There has to be benefit for the designer, construction company, precaster, developer and the end user," notes Topi Paananen. According to him, being an international player gives Peikko the possibility to enhance the use of new and proven technology all over the world. "We believe in innovations and will continue bringing new solutions to the market. At Peikko, we have understood that times change and thus, the company too has to be continuously developed. Peikko is now run by the second generation and owned by the second and third generation. Understanding what goes on at Peikko is important for the young generation. At least now we are teaching the third generation of the Paananen family to weld, so at least in that way there will be continuity. Times will tell how successful Peikko will be in the future in the hands of these young welders," notes Topi Paananen with a bright smile on his face.

"Times will tell how successful Peikko will be in the future in the hands of these young welders."

Third Peikko generation is learning to weld, childrens of Topi Paananen and his sibilings.

50 YEARS OF CONCRETE CONNECTIONS

HISTORY >>>

1965

Peikko is founded and production starts in Lahti, Finland

The first product, the Diagonal Tie, is launched

1970's

Development of connection items for precast construction starts

Fastening Plates are launched

1983

The first generation of Column Shoes is invented

1989

DELTABEAM Composite Beam is launched

First generation of Hidden Corbels is developed

1990

Second generation of modern Column Shoes is developed

Development of forging technology for rebar anchoring begins

1997

Peikko Deutschland GmbH founded and internationalization of Peikko begins

2000

First production unit outside Finland ramps up in Germany

2005

5 sales offices in Europe and production units in 3 countries

2005 – 2008

Fast growth in terms of revenue and geographic coverage

2008

21 sales offices and 4 production units

Development of Peikko Wind Turbine Foundation begins

2009

Developement of Peikko Designer® design software started

2015

Global operations: 33 sales offices and production units in 9 countries

Turnover: EUR 150 million

<<< FUTURE

AND THE JOURNEY CONTINUES...