

Media release
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Who says 5 into 3 doesn't go?

At a Palmerston North Careers Day, 37 pupils from five schools were hosted by three companies each engaged in different aspects of steel construction. The idea was to give interested youngsters insights into career options, with a focus on structural steel.

Pupils from Dannevirke High School, Queen Elizabeth College, Feilding High School, Palmerston North Boys High and Awatapu College were collected by four vans and driven to Silvester/Clark Ltd, Steel Pencil Limited and Stevensons Structural Engineers Ltd where they were introduced to the work typically done by structural engineering consultants, by steel detailers and by steel fabricators and erectors. In addition, the pupils also visited the construction site at Summerhill.

At Silvester/Clark, John Silvester demonstrated the power of the 3-D computer model. "We use sophisticated software programs to design and draw the structure of each building – all the bits that hold the building up. These are largely the bits that you don't see but they are the important bits because they enable the building to withstand various loadings and forces caused by wind, water, fire and earthquakes."

The pupils learned how 3-D modeling can often save the client money when the design engineer spots a problem and solves it even before construction has begun. "Engineering is all about problem solving," John explained, "so if you enjoy thinking up practical solutions to problems, you have 50% of what you

need to be a professional engineer or draughtsman. The other 50% is of course about obtaining qualifications and gaining experience. Put simply, as an engineer you are concerned with how you communicate your ideas in drawings so that others can understand your design and see how its component parts need to be constructed.”

Educational qualifications, fee structures, project variety, local and international experience, employment opportunities – all elicited enthusiastic questioning from the touring schoolboys. The potted history of Silvester/Clark revealed that John has been involved in the construction industry for 30 years. “I consider myself a lucky man, because every day when I wake up I look forward to going to work!”

Time for these pupils to move on and the next bunch to come in. Across the street at Steel Pencil. directors Russell Neal and Reegan Lawton were welcoming pupils from Dannevirke High and Queen Elizabeth College. “One of challenges we face,” the pupils were told, “is that, aside from structural engineers and fabricators, very few people know that we play an integral role in the structural process. In the old days, there weren’t any detailers, but today we detail every member of the building to be constructed, every column and beam, every joint, nut and bolt.

“Whether it’s a cowshed or a multi storey high rise, we co-ordinate the design documents and provide detailed drawings that document how the bits and pieces are to be made. And because the information is generated in 3D modeling software, the possibility of human error at fabrication is eliminated since the data produced from the modeling process can be loaded into a Computer Numerical Control machine (CNC).”

Steel Pencil details drawings for projects in various countries all around the world, from the Pacific Islands to Australia and the USA. The company is looking to recruit cadets for training. “We’ve advertised locally,” says Reegan Lawton, “but

the response has been disappointing. This forces us to recruit from Britain, India, Thailand, the Philippines, even Mexico. Unfortunately there aren't enough trained people here in New Zealand because detailing using 3-d modeling is relatively new."

Steel Construction New Zealand (SCNZ) is currently working with the Association of Consulting Engineers (ACENZ) towards defining the criteria for a certificate in structural draughting and detailing. Companies such as Steel Pencil, meanwhile, rely on their vast experience to determine an individual's ability and potential and are looking to induct suitable candidates into a cadetship. "It's training in both the theory and the practical, which cadets embark on without having to take out a heavy student loan or any at all," says Reegan Lawton. "Of course, we encourage all our staff and cadets to continue study as we realise that ongoing education is the key. It sets challenges for our team, it's not just about work. Many choose to go to university and obtain engineering degrees. When you know that steel is the right industry for you, educational goals become very clear and there is real determination to achieve them. The rewards, in terms of remuneration and job satisfaction, ensure that the student stays motivated."

At Stevensons Structural Engineers Ltd in Tokomaru, Careers Advisor John Adams accompanied pupils from Palmerston North Boys High School Engineering on their tour of the workshop. They saw machine operator Robert Blakelock topping up the coolant of a drill. Robert had returned to New Zealand after a two year stint with the steel industry in the UK.

Next they visited the metal spray coatings area and learned how zinc was applied by the zinc arc process. Some of the boys had done a bit of welding, but for most it was their very first time to put on a welder's mask and have the hands on experience of welding a cleat to a bracket.

Finally, the last stage in the structural steel supply chain: erection on site. Inside the shell of the Summerhill supermarket under construction, Stevensons' Site Foreman Evan Wilson explained how time is saved when steel is fabricated and pre-assembled back at the Tokomaru workshop and transported to the site like units of Meccano. Talking to the kids on the extended platform of a cherry-picker, Evan said: "Speed of construction is important to developers, who usually want a return on their investment sooner rather than later; safety is also extremely important, and there's more to safety than a luminous vest and a hard hat. In the old days, men used to walk steel beams at height. These days that's only ever done when necessary and always with safety harnesses being worn. One of my responsibilities is to manage the accident risk downwards. We achieve this when everyone on site practices safety as a way of life. Everyone is trained to do this. When you join the steel industry today, you can look forward to a long and very fulfilling career."

As growing youngsters need to be kept fed and watered, their host companies provided plenty to eat and drink. In one case the receptionist's lolly jar was raided till empty. The pupils took home pens, CDs, brochures and a booklet produced by Steel Construction New Zealand Inc., titled 'Careers in Steel'.

Steel Pencil's Reegan Lawton says: "The three companies involved in this exercise have worked closely for many years and were able to provide three focal points in the structural steel story. We hope that having met us and got the feel for what it might be like to work with our people, the pupils who are seriously considering careers in steel will have a better idea of where they'd like to start."

CAPTIONS:

1. John Silvester makes the point that the finished structure is exactly as it looked in the 3-D model.
2. Pupils use four model structures – braced, shear wall, unbraced and base isolation – to test how each reacts differently to a simulated 'seismic' event.

3. Russell Neal introduces Richard Berghofer of Queen Elizabeth College to some members of the Steel Pencil team.
4. Tony Hewald (left), Head of Department, Graphics & Technology at Dannevirke, renews acquaintance with former pupil Bevin Thirkell, who now runs all of Steel Pencil's IT systems and is completing a university degree.
5. At Stevensons Structural Engineers Ltd, the lads from Palmerston North Boys High try their hand at some welding, under the watchful eye of Fiti Fata.
6. Stevensons Site Foreman Evan Wilson takes pupils aloft on a cherry-picker to explain why, at the Summerhill site as on every construction site, safety is priority number one.

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