



For more info on JP Marshall, check out jpmarshall.co.nz

Structural engineering has been used for thousands of years for building ancient and modern structures, including the pyramids in Egypt and the Acropolis in Greece.

Closer to home, Curtis Pugh is working through a more modern Heavy Structural Engineering Apprenticeship at JP Marshall Engineering. These days the trade involves detailed knowledge and accurate prediction of how different materials, shapes and structures will cope with a range of loads and stresses.

"An important skill for us is positional welding – very important. If you're working on something at ground level, like truck trailers, you'd just be welding down hand. We work on large structures, where you weld overhead or vertically. So, it's more skilful because height and gravity are involved and when you're melting metal things can move or drip out." - Curtis Pugh



Type of person

- Intuitive
- Patient
- Is able to stick at something
- Excellent problem solver

Relevant Qualifications

- Bachelor of Engineering Technology
- NZ Diploma in Engineering
- NZ Certificate in Engineering (Level 3-5)

To find out more about this sector, profiles of young people like you in the industry, and career tools and tips...

scan here



CURTIS PUGH
HEAVY STRUCTURAL ENGINEERING APPRENTICE



The FutureForce® Crew sat down with Curtis to chat about his role...

HOW DID YOU GET INTO THIS JOB?

I started at NZ Welding School and did a pre-trade Level 3 and 4. Then I signed up with Apprenticeship Training New Zealand (ATNZ) which is how I found the role here at JP Marshall.

WHAT DO YOU DO IN YOUR ROLE?

At this stage, I'm doing basic marking out for fabrication, working materials and metals and site installs. So, we build structures or platforms in the workshop here and sometimes they're too large to transport, so we move it in sections and assemble it on site. For example, with the platforms that go around silos, you take all those sections out and bolt it together when you get to the site.

WHAT DO YOU ENJOY ABOUT YOUR ROLE?

It's quite enjoyable work. It's quite diverse here so you're not always doing the same thing, there's a good range of work. You can go from working with real heavy materials to working with light gauge.

TOP CAREER TIP

YOU'VE GOT TO HAVE GOOD PEOPLE SKILLS. OBVIOUSLY, WORKING IN A TEAM, YOU'VE GOT TO BE ABLE TO GET ALONG AND WORK WITH OTHERS"

WHAT DO YOU ENJOY ABOUT ENGINEERING?

It's quite a diverse career path and there are quite a few roads it can lead down. You don't have to do an engineering apprenticeship – you can be a tradesman or a site foreman or one day get into project management. There's lots you can do.

WHAT ARE SOME OF THE HIGHLIGHTS OF YOUR JOB?

In a lot of other places, there's a production floor where you'll just make one part over and over again but here we get see the build out from start to finish. So it's cool to have that range of work and be able to see it through to a finished product.

CURTIS PUGH
HEAVY STRUCTURAL ENGINEERING APPRENTICE



WHAT SCHOOL SUBJECTS ARE RELEVANT TO YOUR JOB?

Maths is an important one because you need to be able to know the different formulas and equations. It's definitely helpful.

You could take engineering or metal tech, that would make sense! Or even woodwork. All of them are a good introduction to handling and working with machines and different materials.

WHAT HAVE YOU LEARNT ON THE JOB?

I started here with no real fabrication skills, so I've learnt a diverse range of fabrication skills. Working with different materials is an important one; bending, shaping and forming metals. You have to understand the different properties of metals – some are really flexible but some just don't want to bend at all!

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WHAT ARE SOME OF THE SKILLS YOU MIGHT NEED TO HAVE IN THIS KIND OF ROLE?

Time-management is important too to make sure you can get through everything and know what you need to do.

You need good maths skills. A background in fabrication is helpful. And welding – obviously!

Of course, you don't have to start with all those skills on day one but having a willingness to learn is a big thing - there's a lot of on-the-job training.

DID YOU KNOW?

JP Marshall Engineering in Hamilton has been a great place to work for over 60 years. The company is one of New Zealand's largest and most experienced steel fabricators and commercial and industrial engineering providers.

JPM OFFERS SERVICES INCLUDING:

- » Design
- » Laser cutting
- » CNC pressing
- » CNC machining
- » Welding
- » Project management
- » Installation
- » Site services
- » Polish and check the quality of the finished product



JPM J.P. MARSHALL
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