

INFRASTRUCTURE SKILLS CENTRE

Your first step to a future in construction



Training initiative created and facilitated by:



SUPPORTED BY:



MINISTRY OF SOCIAL
DEVELOPMENT
TE MANATŪ WHAKAHIATO ORA





Infrastructure Skills Centre




































“Infrastructure is the key enabler that keeps communities healthy, moving and safe. The Infrastructure Skills Centre will provide new entrants to the sector with foundational skills, capabilities and knowledge that will help them establish a meaningful career delivering critical infrastructure for their communities through its construction, operation and maintenance. Training programmes at the centre use tailored course content and realistic, hands-on delivery methods facilitated by experienced instructors along with governance and oversight from industry, to ensure that the right skills are taught, the right way at the right time. Employers should expect graduates of the programme to possess a working knowledge of health, safety and environmental requirements for industry, along with the capability to use key tools and techniques in the field, all of which will have been developed against a backdrop of expected values and behaviours to help them contribute strongly as part of a team”

Graeme Johnson – Chief Executive Officer NZ, Fulton Hogan Limited

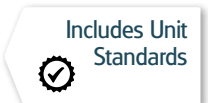


6 WEEK OVERVIEW

WEEK 1 Introduction	Introduction 2 hours 	Being Ready for Work 2 hours 	Team Building 4 hours 	Safety Awareness  4 hours 	Life Skills Budgeting 3 hours 			
	WEEK 2 Concrete	Quality 3 hours 	Site Visit: Allied Concrete 5 hours 	Concrete Works Basic 2 hours 	Concrete Practical  14 hours 	Effective Communication 2 hours 		
		WEEK 3 Drainlaying	Locating & Protecting Underground Services 3 hours 	Read & Interpret Plans 1 hour 	Soil & Aggregates Awareness / Efficient Compaction  3 hours 	First Aid  8 hours 	Laying Pipes & Manholes  8 hours 	
			WEEK 4 Pavements	Bitumen Awareness 2 hours 	Site Visit: Asphalt Plant & Laboratory 6 hours 	Chipseal & Asphalt Awareness 3 hours 	Asphalt Practical  5 hours 	Site Visit: Civil Construction 8 hours 
				WEEK 5 Temporary Traffic management	Basic Traffic Controller (TC) Level 1 8 hours 	Traffic Control Practical  8 hours 	Load Security 4 hours 	EnviroWise 2 hours 
WEEK 6 Power & Hand Tools					Power & Hand Tools  8 hours 	Let's Build Something  16 hours 	Wheels, Tracks & Rollers (WTR) 4 hours 	ConstructSafe Tier 1 Assessment 2 hours 

Spotter & Observer  3 hours 	Light Trailer Safety 3 hours 	Prestarts 1 hour 	Danger Zones 1 hour 	Team Activity 3 hours 	NZCIW Level 2  5 hours 	Fire Extinguisher 4 hours 	Week 1 Review  3 hours 
Time Management  2 hours 	Site Visit: Stahlton Precast Yard 4 hours 	NZCIW Level 2 2 hours 	Site Visit: Miners Road Quarry 4 hours 	Week 2 Review 2 hours 			
Site Visit: Civil Construction 8 hours 	Courageous Conversations 2 hours 	Manual Handling & Back Care 2 hours 	Construction Site Emergency Response  3 hours 	Week 3 Review  2 hours 			
Elevated Work Platform  8 hours 	Life Skills Nutrition & Mental Health 2 hours 	NZCIW Level 2 3 hours 	Week 4 Review 3 hours 				
Scaffold Awareness 8 hours 	Asbestos Awareness 2 hours 	Lockout Tagout Awareness 2 hours 	NZCIW Level 2 2 hours 	Week 5 Review 2 hours 			
Graduation 4 hours 							

KEY



WEEK 1 INTRODUCTION

Introduction

 Induction	Site orientation including safety procedures and ensure all participants comfortable and are aware of the expectations of the programme. Includes a guest speaker and NZ Certificate in Infrastructure Works – Level 2 qualification overview.	2 hours
 Being Ready for Work	Knowing the importance of being on time and ready for work, bringing the right attitude, learn about industry critical risks and prioritising safety. Guest speaker who is of similar age and background recently in employment and sharing their story and advice on starting a new job.	2 hours
 Team Building	Outdoor immersive experience to help participants to get to know each other through problem solving, clue finding, communication and exercise.	4 hours
 Safety Awareness	Understand Stay Safe principles which encompasses safety and human behaviour, how to control risk by asking the 3 Stay Safe questions: "What am I doing?" "What could go wrong?" "How can I do this safely?"	4 hours
 Safety Awareness	Aligned Unit Standards: <ul style="list-style-type: none">• US17593 Apply safe work practices in the workplace.• US497 Demonstrate knowledge of workplace health and safety requirements.• US26720 Describe health, safety and environmental care at an infrastructure worksite.	Included in above
 Life Skills: Budgeting	This programme could possibly be the participants first paid job so a financial advisor will discuss how to budget, set financial goals understand the financial benefits of KiwiSaver.	3 hours

Introduction

<p>Spotter & Observer</p> 	<p>Understand the purpose, role and responsibilities of being a “Spotter” on a construction worksite, participants will have an awareness around working machinery and understanding of hand signal communication using standardised signals between the spotter and operators.</p>	<p>3 hours</p>
<p>Spotter & Observer</p> 	<p>Aligned Unit Standards: • US17327 Apply communication skills on an infrastructure works site.</p>	<p>Included in above</p>
<p>Light Trailer Safety</p> 	<p>How to hitch and unhitch a trailer safely, understand the importance of load security and learn the technique on how to reverse accurately.</p>	<p>3 hours</p>
<p>Prestarts</p> 	<p>Understand the importance of attending a prestart before work commences. Participants will learn how to discuss the work plans, likely risks and how they will control those risks and record on a prestart document.</p>	<p>1 hour</p>
<p>Danger Zones</p> 	<p>On site activity to highlight separation requirements when working around moving plant.</p>	<p>1 hour</p>
<p>Team Activity</p> 	<p>Participants are challenged to build a structure with certain specifications, this is done in a shared situation letting the participants at each table build together. They will learn skills and capabilities for success by communicating, learning from each other and thinking outside the box.</p>	<p>3 hours</p>



WEEK 1 INTRODUCTION

Introduction







<p>NZCIW Level 2</p> 	<p>Opportunity in the class to complete qualification book work from prior learnings from the week.</p>	<p>5 hours</p>
<p>NZCIW Level 2</p> 	<p>Aligned Unit Standards: • US22283 Demonstrate Knowledge of occupational areas and structures in NZ infrastructure works industry.</p>	<p>Included in above</p>
<p>Fire Extinguisher</p> 	<p>Provides participants with the knowledge to evaluate fire scenarios and take correct action in terms of evacuation procedures. Identify and select correct extinguisher for fire classes and the actual use of a fire extinguisher.</p>	<p>4 hours</p>
<p>Week 1 Review</p> 	<p>A review of what has been learnt for the weeks, complete, sign and hand in timesheets. BBQ to celebrate the finish of week 1.</p>	<p>3 hours</p>
<p>Week 1 Review</p> 	<p>Aligned Unit Standards: • US4249 Demonstrate care and timeliness as an employee.</p>	<p>Included in above</p>



Concrete

Quality 	Understand the importance of quality within the construction industry making sure we “do it once and do it right”. Introduction and awareness of the difference between QA vs QC this includes a practical hands on exercise on what the consequences are when we do a job wrong.	3 hours
Site Visit: Allied Concrete 	Understand how a concrete manufacturing business operates learn how concrete is made (weights, volume and quantity), how the concrete plant works (mix design, differences between 10mpa and 60mpa). Types of aggregates and cement, add mixes (retarders and accelerates). Engineer required additives i.e. denka, steel fibre. Water content and how it changes concrete mixes and testing of concrete i.e. slump, compression, schmidt hammer.	5 hours
Concrete Works Basics 	Continuing the learning from the Allied site visit back in the training room looking at the hazards associated with wet concrete, placing and vibrating. Ensure concrete works that are being undertaken on site are not impacting our environment or waterways.	2 hours
Concrete Practical 	Practical hands on session building a concrete pathway or similar, work instructions and plans will be given to participants and they will learn about levels, offsets, boxing, pouring, vibrating and finishing.	14 hours
Concrete Practical 	Aligned Unit Standards: <ul style="list-style-type: none"> • US9677 Participate in a team or group which has an objective. • US27329 Apply quality assurance practices to own work area in an infrastructure works operation. 	Included in above
Effective Communication 	Identify barriers to communication and how to overcome them, active listening and different types of communication.	2 hours

Concrete

<p>Time Management</p> 	<p>Explain what good time management looks like, recall some strategies to manage time wasting and distractions and manage time efficiently.</p>	<p>2 hours</p>
<p>Time Management</p> 	<p>Aligned Unit Standards:</p> <ul style="list-style-type: none">• US12349 Demonstrate knowledge of time management.	<p>Included in above</p>
<p>Site Visit: Stahlton Precast Yard</p> 	<p>Understand how precast concrete is made, learn what prestressing does to concrete beams and understand the importance of quality control in precast manufacturing.</p>	<p>4 hours</p>
<p>NZCIW Level 2</p> 	<p>Qualification bookwork modules prior to learnings.</p>	<p>2 hours</p>
<p>Site Visit: Miners Road Quarry</p> 	<p>Learn how a quarry operates including aggregate production and the different applications.</p>	<p>4 hours</p>
<p>Week 2 Review</p> 	<p>A review of what has been learnt for the week and complete, sign and hand in timesheets.</p>	<p>2 hours</p>



Drainlaying

Locating & Protecting Underground Services



Introduction to the risks and dangers involved in excavation, covering location and protection tools available to safely manage these risks and what tools should be used in specific situations.

3
hours

Read & Interpret Plans



It includes the identification of types of plans and drawings and their functions, the recognition of commonly used symbols and abbreviations, the identification of key features and specifications on a site plan. The comprehension of written job specifications and the recognition of document status and amendment detail.

1
hour

Soil & Aggregates Awareness / Efficient Compaction



Entry level awareness of soil and aggregates including a practical session where participants will be given a work instruction and plans to undertake an efficient compaction practical exercise.

3
hours

Soil & Aggregates Awareness / Efficient Compaction



Aligned Unit Standards:

- US6477 Identify, hand spread and assist in compacting materials for infrastructure works.
- US27329 Quality Practices.
- US6479 Maintain small machinery.
- US27500 Operate compaction equipment on site.

Included
in above

First Aid



Workplace first aid training that ensures all participants feel confident they have the skills to provide life saving first aid assistance in their workplace.

8
hours

First Aid





Aligned Unit Standards:

- US6401 Provide first aid.
- US6402 Provide basic life support.

Included
in above

Drainlaying

<p>Laying Pipes & Manholes</p> 	<p>Practical hands on session learning how to safely carry out an excavation and lay pipes and manholes.</p>	<p>8 hours</p>
<p>Laying Pipes & Manholes</p> 	<p>Aligned Unit Standards:</p> <ul style="list-style-type: none">• US6472 Carry out manual excavation for infrastructure works.	<p>Included in above</p>
<p>Site Visits: Civil Construction</p> 	<p>Visit civil construction sites looking at a variety of projects incorporating learnings to date.</p>	<p>8 hours</p>
<p>Courageous Conversations</p> 	<p>Learn how to approach situations that could be uncomfortable or complex.</p>	<p>2 hours</p>
<p>Manual Handling & Back Care</p> 	<p>Learn the correct techniques on all aspects of manual handling which includes lifting, shoulder movement, twisting, balance which a focus on back care and learning to identify the first signs of pain to avoid further injury.</p>	<p>2 hours</p>
<p>Construction Site Emergency Response</p> 	<p>Learn about the different types of emergencies that can occur on a construction site and how to respond to these situations.</p>	<p>3 hours</p>



WEEK 3 DRAINLAYING

Drainlaying

Construction Site
Emergency Response



Aligned Unit Standards:
• US20868 Demonstrate knowledge of emergency response in the infrastructure industry.

Included
in above

Week 3
Review



A review of what has been learnt for the week and complete, sign and hand in timesheets.

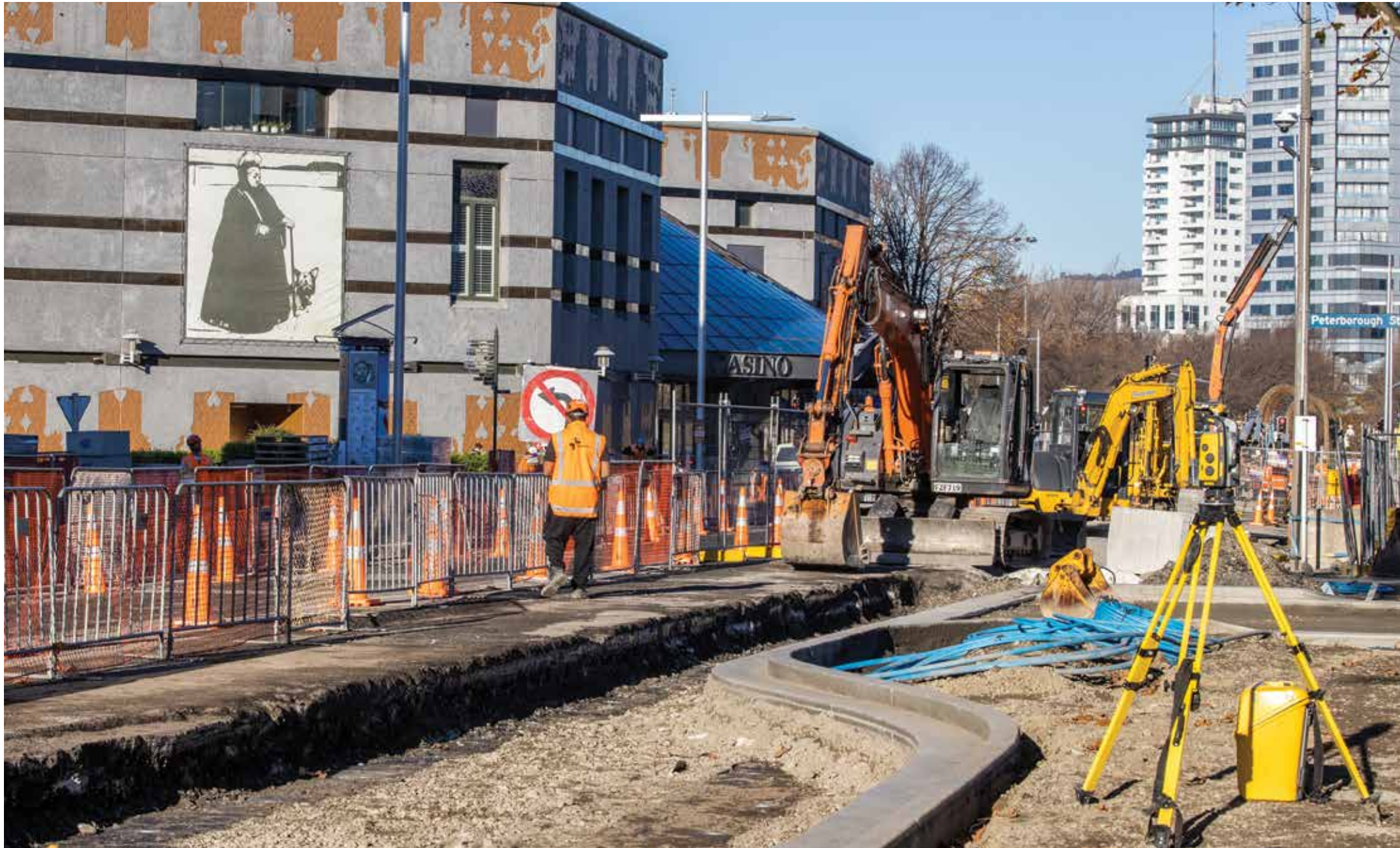
3
hours

Week 3
Review



Aligned Unit Standards:
• US4249 Demonstrate care and timeliness as an employee.

Included
in above



Pavements

 Bitumen Awareness	Learn about the hazards associated with bitumen and bituminous products and an introductory overview of PPE and first aid.	2 hours
 Site Visit: Asphalt Plant & Laboratory	Understand the process of manufacturing asphalt including storage and handling of asphalt and bitumen and why we test products in a laboratory environment.	6 hours
 Chipseal & Asphalt Awareness	Basic overview of pavement design including understanding of construction materials (i.e. aggregates, asphalt and bitumen).	3 hours
 Asphalt Practical	Practical hands on session laying an asphalt pathway or similar.	5 hours
 Asphalt Practical	Aligned Unit Standards: • US6475 Describe and complete work records.	Included in above
 Site Visits: Civil Construction	Visit civil construction sites looking at a variety of projects incorporating learnings to date.	8 hours

Pavements






<p>Elevated Work Platform</p> 	<p>Both theory and practical lessons will cover the following:</p> <ul style="list-style-type: none"> - Identify the different types of MEWPs, their suitability for purpose, and safety features. - Understand the legislative requirements in relation to the Approved Code of Practice for the use of MEWPs. - Assess the worksite, prepare to use a MEWP and carry out MEWP operations. - The MEWP is shut down, made safe, and secured, in accordance with organisational requirements. 	<p>8 hours</p>
<p>Elevated Work Platform</p> 	<p>Aligned Unit Standards:</p> <ul style="list-style-type: none"> • US23966 Describe types of elevating work platforms and legislative requirements for their use. • US23960 Assess the worksite, prepare and operate a scissor lift elevating work platform. • US23962 Assess the worksite, prepare and operate a self-propelled boom lift elevating work platform. • US23963 Assess the worksite, prepare and operate a trailer-mounted elevating work platform (cherry picker). 	<p>Included in above</p>
<p>Life Skills: Nutrition & Mental Health</p> 	<p>Learn about good nutrition and how to look after your mental health.</p>	<p>2 hours</p>
<p>NZCIW Level 2</p> 	<p>Qualification bookwork modules prior to learnings.</p>	<p>3 hours</p>
<p>Week 4 Review</p> 	<p>A review of what has been learnt for the week and complete, sign and hand in timesheets.</p>	<p>3 hours</p>



Temporary Traffic Management

<p>Basic Traffic Controller (TC) Level 1</p> 	<p>This one day course promotes safe working practices, standards and operating procedures on roadwork sites. This is a Waka Kotahi (NZTA) Level 1 Basic Traffic Controller (TC) which offers the standard operating procedures required by the Code of Practice for Temporary Traffic Management (COP/TTM).</p>	<p>8 hours</p>
<p>Traffic Control Practical</p> 	<p>Putting into practice what participants have learnt the day before, including cone set up, E-Stops, radio control and attitude towards motorists.</p>	<p>8 hours</p>
<p>Traffic Control Practical</p> 	<p>Aligned Unit Standards:</p> <ul style="list-style-type: none"> • US20877 Demonstrate knowledge of working on a site under TTM. • US20878 Assist with TTM for low volume and Level 1 roads. 	<p>Included in above</p>
<p>Load Security</p> 	<p>Covers the NZTA light vehicle towing guide and truck loading code of practice, with a practical training on load security.</p>	<p>4 hours</p>
<p>EnviroWise</p> 	<p>Upon completion of this session, participants will be able to understand the common environmental risks and controls that may be encountered and required on construction sites; and have a basic introduction to environmental legislation and sustainability.</p>	<p>2 hours</p>
<p>Spill Response</p> 	<p>Learn how to clean environmental pollution discharges using the correct equipment in a spill kit.</p>	<p>2 hours</p>

Temporary Traffic Management



<p>Scaffold Awareness</p> 	<p>Introduction to scaffold specific terminology the different types of scaffolding and learn how to identify unsafe/non-compliant scaffolds.</p>	<p>8 hours</p>
<p>Asbestos Awareness</p> 	<p>Identifying potential asbestos materials within the construction sector, health effects, legislation and safe work procedures.</p>	<p>2 hours</p>
<p>Lockout Tagout Awareness</p> 	<p>An understanding of why we need lock-out tag-out procedures for carrying out repair/maintenance on fixed and mobile plant.</p>	<p>2 hours</p>
<p>NZCIW Level 2</p> 	<p>Qualification bookwork modules prior to learnings.</p>	<p>2 hours</p>
<p>Week 5 Review</p> 	<p>A review of what has been learnt for the week and complete, sign and hand in timesheets.</p>	<p>2 hours</p>



Power & Hand Tools

<p>Power & Hand Tools</p> 	<p>Introduction to the different types of hand and power tools used on a typical construction site. Participants will learn about the different hazards different tools can expose them to.</p>	<p>8 hours</p>
<p>Power & Hand Tools</p> 	<p>Aligned Unit Standards:</p> <ul style="list-style-type: none">• US23285 Use and care for hand tools used on sites.	<p>Included in above</p>
<p>Let's Build Something</p> 	<p>Participants will be given a work instruction, materials and tools to build something for a charity or community project under direct supervision. Assessments will be conducted on how participants use tools correctly including time management, quality and workmanship of the finished product.</p>	<p>16 hours</p>
<p>Let's Build Something</p> 	<p>Aligned Unit Standards:</p> <ul style="list-style-type: none">• US17593 Apply safe work practices in the workplace.	<p>Included in above</p>
<p>Wheels, Tracks & Rollers (WTR)</p> 	<p>Obtain wheels, tracks and rollers endorsements (class 1 license a prerequisite).</p>	<p>4 hours</p>
<p>ConstructSafe Tier 1 Assessment</p> 	<p>This is an assessment only and is provided by Construction Safety Council. It is best practice and sets a benchmark for health and safety competency in the NZ construction industry.</p>	<p>2 hours</p>

Power & Hand Tools

<p>NZCIW Level 2</p> 	<p>Work through qualification modules ensuring all evidence is gathered to meet the requirements of the qualification.</p>	<p>5 hours</p>
<p>Graduation</p> 	<p>Celebration and graduation for all participants their whanau, friends, mentors, facilitators and managers.</p>	<p>4 hours</p>



Virtual Reality Training

The following virtual reality modules will be covered during the various days within the 6 week programme:

- Confined Spaces US18426
- Working at Heights US17600
- Traffic Control
- Machine Operation





Contact: Alena Taylor – Programme Manager
alena.taylor@fultonhogan.com | 027 545 5567



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