



Health, Safety & Environmental Policy

**ZERO**  **CIVIL**  
ZERO WASTE, ZERO HARM 

## WHS regulations require you to eliminate risks by eliminating hazards when possible.

Road workers are some of the most vulnerable people on our roads. Ironically, they are working to keep our roads safe and yet every day they are exposed to a variety of hazards, with the number one cause of injury being body stressing from digging and heavy labour,

Then there's working in dangerous traffic (the number one cause of serious injury being hit by an errant vehicle), plus exposure to the dangerous fumes from vehicles, and with rapid urbanisation the traffic and risks are about to increase considerably.

For those installing infrastructure there's the growing risk of serious, even fatal injury (plus the risk of expensive fines) caused by hitting dangerous underground obstacles or utilities.

After all this, as populations grow so does the damage and the delays, with recent research showing that in more densely populated cities abuse from drivers is getting so out of hand that in the UK road workers must undergo self-defence courses.

But one of the most alarming and significant non-vehicular causes of on-road and off-road worker injury is **crystalline silica dust**. Silica dust forms from crushed rock, sand and concrete, and frequent inhalation may cause lung disease, lung cancer, chronic obstructive pulmonary disease (COPD) or kidney disease and the only way to avoid it is to stop using concrete.

## "THE NO.1 CAUSE OF INJURY"

BODY STRESSING



**You now have the power to reduce risks by a minimum of 80%**

By making pavements, traffic islands and foundations reusable you eradicate 100% of your problems related to repeat replacements and substantially reduce the risk of workplace injury.

The workloads won't decrease, (in fact, with rapid urbanisation they are predicted to increase substantially in the coming years), but your workers can perform the work faster and more efficiently with zero disturbance to traffic and dangerous underground services

# "THE NEXT ASBESTOS"

NATIONAL INSTITUTE FOR HEALTH

100 %

REDUCE THE RISK OF INJURY CAUSED BY DIGGING & HEAVY LABOUR

100%

REDUCE THE RISK OF WORKERS CONTRACTING DANGEROUS SILICOSIS

100%

REDUCE THE RISK OF DAMAGE TO COSTLY UNDERGROUND SERVICES

100 %

ERADICATE THE NEED FOR COSTLY TRAFFIC MANAGEMENT

# Developments and maintenance organisations quickly become financially sustainable

80% of the workload results from the most vulnerable items (which represent around 20% of all items). These are first to be damaged (and repaired) and once repaired, for 80% of all future work, the only cost is a few minutes labour. No damage, no disturbance and no repair costs for the next 100 years



It will take some time for an existing city to be repaired, but within two to three years this work will become financially and environmentally sustainable. 80% of the workload comes from 20% of items, once these are repaired, only 20% of your workload will require digging and heavy labour (each year reducing until zero workload requires digging and heavy labour).

This will also eradicate the consumption of concrete and substantially reduce costs and risks as all work is conducted quickly and efficiently without the need for digging and heavy labour on 80% of all future workload.

# Developments and maintenance organisations quickly become financially sustainable



The most vulnerable 20% of items are responsible for 80% of your workload. The first damaged are the first repaired, so within 2-3 years almost all of the vulnerable items will have **ZERO WASTE** Foundations





There's a revolution happening  
**BE PART OF IT**



There's a revolution happening  
**BE PART OF IT**



There's a revolution happening  
**BE PART OF IT**

## **HEALTH**

Join the cities eradicating damage indefinitely, creating cleaner, safer more dynamic cities that are able to quickly adapt to changing needs and requirements throughout the day, or decade -never growing old or unsafe.

## **SAFETY**

New technologies are revolutionising roadworks- greatly improving workplace safety. Damaged roadside can now be replaced in seconds from a standing position, without disturbance. DOH&S Worksafe Award

## **ENVIRONMENT**

Zero ongoing damage or waste. Zero ongoing consumption of carbon intensive concrete for the next 100 years, greatly improving the environmental sustainability of a city. It's time to clean up your city and build a better future

# 05

## Providing a simple solution to some of the biggest problems facing our industry today

### 1. Growing Costs

Repeatedly replacing valuable concrete footings provides no future benefit so every year the damage and cost of repeated repairs continue to grow. With ever increasing safety and environmental pressures, global unrest and depleting resources, the cost of materials is rapidly increasing as the gap between the growing demand and the finite budgets continues to grow



### 2. Risk of cost overruns

It's hard enough to budget with the rapidly increasing cost of carbon intensive supplies, but it's the unknown variables, such as delays caused by heavy traffic or rain; injury caused by working in traffic; back injuries from digging and heavy labour; or costly damage to the growing number of (often poorly mapped) underground services, that cause havoc with budgets and the risk of cost overruns is growing.



The worst part is that all this hard work provides no future benefit so every year the costs and risks continue to grow. **We decided it was time to put an end to this madness!**

### 3. Carbon waste

Current methods are consuming vast quantities of carbon intensive concrete. We are already borrowing resources from future generations and with rapid urbanisation the damage, carbon waste and consumption of finite resources is growing at an unprecedented rate



### 4. Growing disturbance

The disturbance to traffic flow and pedestrians has become a major problem in our cities resulting in a growing number of roadworks, increasing costs and with rapid urbanisation the disturbance, the resulting delays and public dissatisfaction are set to increase dramatically



### 5. Growing difficulty

Building and maintaining roads is hard work, dealing with traffic, angry drivers, cancer causing silica dust, dangerous and poorly mapped underground services - our road workers are risking their lives on daily basis. and with rapid urbanization this job is becoming increasingly dangerous.



# 05

## Providing a simple solution to some of the biggest health & safety problems facing our industry today

### Growing Environmental Cost



#### 1. Carbon Waste

**With ever increasing environmental pressures, and depleting resources, the worst part is that all this hard work provides no future benefit so every year the consumption and waste continue to grow**

Repeatedly replacing valuable concrete footings provides no future benefit so every year the damage and waste continues to grow.

These methods are consuming vast quantities of carbon intensive concrete. Despite global efforts and promises to reduce consumption of the world's most dangerous material, we are steadily increasing consumption.

We are already borrowing resources from future generations and with rapid urbanisation the damage, carbon waste and consumption of finite resources is growing at an unprecedented rate.



### Growing safety concerns

**Our road workers are risking their lives on daily basis. and with rapid urbanization this job is becoming increasingly dangerous.**

#### 2. Body Stressing

The number one cause of injury is body stressing from digging and heavy labour. By making foundations reusable you eradicate the need for digging and heavy labour for the next 100 years

#### 3. Working in Dangerous Traffic

Building and maintaining roads is hard work, and the risk of injury resulting from traffic and angry drivers, and as our population density continues to rise so will this risk. My making foundations reusable you remove disturbance to traffic and reduce time on location to seconds.

#### 4. Dangerous underground Services

With the number of often poorly mapped underground services rapidly increasing so is the risk of serious, even fatal injury to workers, continually digging up roads and pavements

### 5. Growing safety concerns

cancer causing silica dust,





New innovative technology, unlike anything we've seen before, (previously only used in the aerospace industry) is being used by Australia's market leaders to put an end to repeated repairs, revolutionising road works.

**Innovator of the Year** Department of Commerce

**Worksafe Award** Dept of Occupational Health & Safety



THE SUNDAY TIMES





## ZERO DAMAGE

The world's first means of preserving pavements and valuable carbon resources for the entire lifespan of a development. Awarded Innovation of the Year by Department of Commerce ZERO Unbreakable Foundations are unlike anything you've seen before

Whilst traditional cities remain in constant state of decline, struggling to cope with the growing workloads, find out how others have put an end to damage and each year grow increasingly efficient



### IMPACT TESTED AT 10 - 110 KMPH

#### LOW SPEED IMPACT

The post bends at ground level and the advanced polymer socket shields the concrete, absorbing the impact force and protecting the surrounding foundations from damage indefinitely.

#### HIGH SPEED IMPACT

When severely impacted posts bend at ground level (no matter what speed or strength of post) without damage to footing and can be easily removed using removal tool/ flattened post tool/ sheared post removal tool.



ZERO WASTE



ZERO ON-GOING CONSUMPTION



## ZERO HARM

DOH&S Worksafe Award for eradicating digging and heavy labour; reducing time spent in traffic; and eradicating the risk of hitting underground obstacles.

Items are effortlessly removed using ergonomic tools from a standing position and a new item simply dropped into position, automatically locking in using friction

Replacements are conducted in less time than it currently takes to erect traffic management



ZERO Unbreakable Foundations allow quick replacement of items with no further effort required to the base, (providing a significant cost benefit in replacing the damaged item by re-using the existing footing) and reduces risk of injury to employees by reducing time spent on traffic islands exposed to traffic.”

### MAIN ROADS WA

*“Our selection is not based on price alone; we also took into consideration the safety & saving aspects.”*



ZERO HARM



ZERO ON-GOING DISTURBANCE



## **We're passionate about building a better future**

The environmental crisis has reached a critical tipping point, as have our cities and their ability to cope with the growing maintenance requirements and difficulty performing this work

With fast depleting resources the current methods of buy, replace, repurchase- will soon become untenable.

Without the civil industry committing to reduce carbon intensive waste, and employ more sustainable technologies we will destroy our ability to repair our cities

At Zero Civil the protection and preservation of the environment what we do after hours- it's the reason we're in business and our every day's work.

We have developed the worlds first sustainable solution to this problem.

**We seek not only to do less harm, but to do more good.**



## Health, Safety & Environmental Policy

Our company is committed to ensuring a safe and healthful workplace, protecting the environment and minimising future adverse environmental impacts upon the environment

We minimise our impact through innovative product development providing simple solutions to help our clients

1. Improve workplace safety and the safety of our cities
2. Reduce waste and consumption of carbon intensive supplies
3. Improve the liveability and sustainability of our urban environments

The road construction industry has one of the largest levers to inhibit climate change through the reduction of carbon waste and ongoing consumption of concrete (the world's greatest polluter, second only to vehicles) and the longer governments continue to do business as usual, the greater the cost.

We believe that without de-carbonizing the civil industry, we stand little chance of achieving the goals set in the Paris Protocol Agreement.

**Reducing waste is not enough-  
we can now repair our cities  
and put an end to the damage and  
disturbance caused by repeated repairs**



Tasks	Hazards	Safe working procedures	Precautions
Installing Sockets	<ul style="list-style-type: none"> <li>- Bending of the back</li> <li>- Twisting of the back</li> <li>- Working in traffic</li> </ul>	<ul style="list-style-type: none"> <li>• Dial before you dig</li> <li>• Install appropriate traffic management</li> <li>• Dig hole to insert ground socket</li> <li>• Insert Installation tool inside ground socket</li> <li>• Lower Installation tool &amp; socket into hole and fill with concrete.</li> <li>• Operate installation tool from standing position with straight back</li> <li>• Once concrete has cured spin tool to remove</li> <li>• Safely dispose of waste (recycle if possible)</li> </ul>	<ul style="list-style-type: none"> <li>- Use installation tool to avoid bending of the back</li> <li>- When possible, it is advisable for user to face on-coming traffic</li> <li>- If item is not ready to install- insert cap to avoid tripping factors/ entry of dirt and grit</li> <li>- Insert cap before pouring asphalt to avoid trip factors/ ingress of asphalt</li> </ul>
Installing Items	<ul style="list-style-type: none"> <li>- Bending of the back</li> <li>- Twisting of the back</li> <li>- Working in traffic</li> <li>- Item not secure</li> </ul>	<ul style="list-style-type: none"> <li>• Install appropriate traffic management</li> <li>• Attach Taper to item using self-drilling screws provided (This can be done prior to going onsite to reduce time on location)</li> <li>• Using two hands, drop item firmly into ground socket</li> <li>• Check item is sufficiently installed to protect from unauthorized removal</li> </ul>	<ul style="list-style-type: none"> <li>- Avoid bending of the back</li> <li>- Avoid twisting of the back</li> <li>- When possible, it is advisable for user to face on-coming traffic</li> <li>- Make sure taper finishes flush with round level to provide adequate resistance against unauthorised removal</li> </ul>
Using Removal Tool	<ul style="list-style-type: none"> <li>- Bending of the back</li> <li>- Twisting of the back</li> <li>- Working in traffic</li> <li>- Trapping of fingers</li> </ul>	<ul style="list-style-type: none"> <li>• Position a minimum of two safety cones or safety barriers at extremity of working space</li> <li>• Make sure the base of the tool as close as possible to the base of the item before applying jerking action</li> <li>• Apply quick jerking action using both arms</li> <li>• Lift item from ground socket using two arms (for items over 25 kg 2 people must lift item from ground socket)</li> <li>• Bend knees to insert cap in ground socket/ or insert new item</li> </ul>	<ul style="list-style-type: none"> <li>- Always operate tool from a standing position facing tool</li> <li>- Keep back straight</li> <li>- Use quick jerking action as it requires less force</li> <li>- When carrying tool hold arms together with upright to avoid trapping fingers</li> <li>- When possible, it is advisable for user to face on-coming traffic</li> </ul>

# Workplace Safety

Department of Occupational Health & Safety presented ZERO Civil with the **WA WORKSAFE AWARD** for

- successfully addressing the major cause of injury (body stressing from digging & heavy labour)
- the major cause of serious workplace injury (working in traffic)
- and removing the risk of injury or death resulting from damage to underground services

**Ergonomically designed tools enable all work to be conducted safely from a standing position, facing traffic, greatly improving workplace safety.**

**Installation tool** is used to position socket in concrete from a standing position.

**Removal tool** (and shared post removal tool) enable items to be removed effortlessly, from a standing position, facing traffic.



## Safer Infrastructure

Items are secured using friction, which ensures they remain perfectly aligned, safe and secure year after year (no other device can do this)

- Dirt and grit will not adversely affect the locking action (no other device can do this).
- Water will not adversely affect the locking action (no other device can do this).
- Sockets and taper will not rust or corrode and will also protect item from corrosive concrete (no other device can do this).
- No trip factors- sockets are installed flush with ground level so provide no dangerous trip factors. When item is removed- socket can be capped off and walked or driven over.

## Safer Developments

Any 60OD post (signposts, grabrails, barriers, bins., tables, seating, nets, statues have all been secured using this device.

Large diameter bollards can be secured on the same footing (60 OD socket) using the **ZERO WASTE** Impact Recovery System.

Bollards become impact resistant (safer) as they absorb the impact force reducing risk of injury to drivers, damage to vehicles and damage to the surrounding foundations

Bollards become removable and reusable, reducing waste) and are easily removable and replaceable (reducing disturbance to public and underground services).

Greatly improving the efficiency and dynamics of a development as items can be removed, relocated or replaced in literally seconds for events, maintenance, disaster recovery or future upgrades.

**Clean up following natural disasters is fast and efficient.**








## Lean and efficient operations

We manufacture ethically produced products designed to improve the resilience and sustainability of road projects.

All work is conducted locally using local manufacturers and sourcing local materials (when possible recycled waste is used in the manufacture of our products)

- Health, safety and environmental considerations are integrated into all aspects of our work.
- We strive to continuously improve health, safety and environmental performance.
- Encourage contractors to be responsible for identifying and eliminating hazards, preventing injury to themselves and others, and preventing adverse environmental impacts.
- Provide personnel with sufficient training, resources and systems.
- Provide and maintain properly engineered facilities, plants and equipment.
- Minimize waste generation, air emissions and other discharges from our activities to the environment.



ZERO CIVIL is committed to providing and maintaining a safe and healthy workplace for all workers (including contractors) as well as clients, visitors and members of the public.

The company is structured to maximise effectiveness and reduce risk, with around 96 % of work conducted off-site. Hazards and risks to health and safety are eliminated or minimised, as far as is reasonably practicable.

We are committed to complying with the *Work Health and Safety Act 2011*, the *Work Health and Safety Regulation 2011*, codes of practice and other safety guidance material and helping our clients to do the same.



# Responsible manufacturing

## We are not Bound by Convention

Our success lies in thinking outside the box and developing new innovative ways of doing things.

Most roadside items are designed to fail so you return to buy more. That's where we differ – although we've often been told it doesn't make good financial sense, we believe the best way to limit our ecological impact and make a difference is with good honest products that last for generations.

We manufacture ZERO WASTE Foundations from 100% recycled petroleum waste (considered the world's most environmentally friendly polymer compound)

Our Impact Recovery and Shock Absorbing Rings are made from rubber, and we use a percentage of recycled material (although we haven't managed to find a way to make them from 100% recycled rubber and maintain our extremely high quality standards and sustainability requirements – we are still trying to find a way and hope with advancements in the field- we'll soon find a way.

Our bollards are made from Australian raw materials producing quality products that will outlast imported products, reducing waste and consumption.

We are now working on developing a range of Zero Waste products made from recycled plastic bags and rubber from car tyres.

Not only do our products reduce damage and waste, they overcome the traditional sequence of buy, replace, repurchase - with buy and reuse, reducing both carbon waste and the on-going consumption of carbon resources

**Overcoming the traditional sequence of  
buy, replace, repurchase, repeat-  
with buy and re-use for a lifetime**


# Our Industry has a carbon problem

**We urgently need to re-think single-use concrete. This violates the Paris agreement on climate change, under which every government in the world agreed that annual carbon emissions from the cement industry should fall by at least 16% by 2030.**

Concrete is regarded as the most dangerous material on earth yet globally billions of highly vulnerable roadside items and items of street furniture are secured directly into concrete consuming billions of tonnes annually as these valuable concrete footings are repeatedly replaced

In Australia alone we dispose of more than half a million concrete footings every year, and as our populations grow so will the damage, the disturbance and the waste, creating a major problem for future generations

Unless we act, and act fast, with our urban populations set to explode the damage and difficulty performing this work will dramatically increase as will the amount of carbon waste



**As one of the most polluting industries, the challenges we face as an industry are enormous. We recognise that current recycling programs are not enough and that without decarbonizing the civil industry, we stand little chance of achieving the Paris goals.**

**Single use plastic has been banned around the globe and yet single-use concrete (considered the world's most harmful material) is a global problem of far greater importance.**

**Concrete is designed to last 100 years yet 100 percent of concrete used to secure roadside items ends up in landfill where its impact on the planet lasts a lifetime.**





## Limiting the ecological impact

Awarded innovator of the Year we have developed the world's first means of preserving concrete footings for the entire lifespan of a development. This is truly a game changer!

Instead of repeatedly replacing pavements and concrete footings, now for the first time in history **w**e can repair our cities and protect pavements for the entire lifespan of a development.

1. Zero damage
2. Zero carbon intensive waste
3. Zero on-going consumption of concrete
4. Zero on-going consumption of paving
5. Zero on-going consumption of sand
6. Zero disturbance to traffic causing congestion and pollution

## We need to re-think recycling

In this industry most products are designed to fail, creating a never-ending cycle of waste. The greatest focus for most companies is on making their products recyclable but this simply delays the inevitable trip to the tip

We recognise that current recycling programs are not enough. Instead of recycling waste we need to not create it in the first place. Recycling concrete waste is almost impossible when you have metal fused with concrete- paving rubble amongst concrete and steel. A very small proportion can be recycled and to perform the work to make it suitable for recycling is costly (not something many local govt authorities can afford and let's be honest if it costs money, it is not something commercial enterprises wish to do!) It is costly work, and the outcome is simply delaying the inevitable- as concrete cannot be perpetually recycled, 100% of the concrete used for repeated repairs ends up as carbon intensive landfill.

We need to re-think the three R's as reduce, reuse, recycle is simply not enough -

- Instead of reducing the use of concrete we can put an end to the consumption of concrete for repeated repairs
- Instead of re-using once or twice, we can now reuse it for 100 years
- Re-use over and over again for the entire lifespan of a development

### REPAIR

ZERO WASTE Foundations are used to repair pavements and concrete footings

### RE-USE

Making them impact resistant and reusable year after year

### REDUCE

Reducing waste and consumption to ZERO for the next 100 years

## **Socially sustainable, dynamic cities that never grow old**

We can now transform our static unyielding urban environments, that are subject to constant decay, into sustainable cities that remain in pristine condition for decades.

Cities become dynamic, (able to quickly adapt to meet changing needs of the city throughout the day, week or decade) never growing old and tired.

Roadside items from traffic and parking signs, to barriers, bollards, traffic light columns and street furniture becomes removable, replaceable and even relocatable for events, disasters response, seasonal changes, maintenance and future upgrades.

**Now there's no excuse for poorly  
maintained unsafe urban environments**





## Together, we can build a better future

Every purchase you make, helps build a better future. We believe to build a better future we need to not only build more resilient cities, but more resilient communities

Many of our people have been through a lot over the past few years from fires to floods and covid – many cities are struggling to get back on their feet. We offer relief packages to regions suffering from floods and damaged infrastructure and discounted pricing - if you know of a city that could do with help rebuilding, please visit our website to nominate a city to receive a relief package.

We fund projects encouraging and supporting youths to develop new innovative solutions to our biggest problems. We are now working on developing products to use recycled plastic bags and tyres and help reduce landfill.

We also fund projects designed to improve the lives of the less privileged in Australia. We have begun with local projects addressing homelessness, and helping women and children escape violence but as we develop new regions, we shall use the profits from those regions to provide local help in the to those in need and let our clients choose where they want the money spent. **Our aim is to help build a better future.**

