ISSUE 2 | AUG/SEP 2021

CANZAC® GROUP LTD
Improving the performance of concrete worldwide®

"Latest new product releases, new innovations in concrete, technical know-how, latest news, a glance around the world and the art of concrete, some updates from our team and some secrets we thought worthy of sharing as we make the world and navigation of concrete even better."

CONCRETE COMPASS

Welcome to the latest from the world of concrete

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Check out all you need to know, in this issue. Scroll through the newsletter or simply click on the stories of interest here and go straight to the facts.

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Accessories for the
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CANUTE
ON CONCRETE

COST CONSCIOUS TIMES IN CONCRETE CONSTRUCTION

In this cost-conscious time in concrete construction, architects, engineers and contractors have available to them a product and service operation which can cut cost and improve efficiency. This is the concrete construction speciality house. Not a new idea in other parts of the world **but certainly unique to New Zealand and Australia**.

What is the function of a concrete accessory house? Basically, the sale and rent of concrete accessories of and for both vertical and horizontal concrete construction. Some of the systems include formwork and formwork hardware and accessories to the construction industry for reinforced concrete structures of all types. From industrial warehouses, food production cool-stores and freezers to bridges, dams and wharfs to name a few. A wide range of concrete specialty items includes formwork, hardware dowels armour joints inserts and anchors curing systems joint fillers, densifiers and many more.
We like to think of ourselves as the supermarket or a one stop shop for the concrete construction trade and have an extensive range of systems that go under-slab – in-slab – on slab.

BASED ON WHAT WE UNDERSTAND, THE FOLLOWING FOUR SERVICES WOULD BE THE MOST IMPORTANT TO THE CONTRACTOR.

1. The ability of a wide range of materials or systems that can either be purchased or rented so the contractor does not have to wait, so the contract can progress to the planned programme. Many project contractors do not want to invest heavily in equipment particularly those who do a wide variety of projects requiring different types of equipment and accessories.

But most of the time it is more economical for the contractor to buy. Plus, the fact that many of the accessories we sell stay in the structure either specified by the engineer or chosen by the contractor. Utilised in the structure accounts for about 85-90% of our dollar volume in sales and only 10-15% in rentals.

2. Prompt delivery to the job site when required and for some contractors this can be all the time, every time an order is placed. Of a very large range of accessories. Immediate delivery is normally only available in major cities or towns in the regions. Orders, have to be sent by other transport operators and that can be problematic and if the product to be ordered and it is a manufactured item then the supply house needs lead time.

3. Assistance in quoting at tender stage realistically on a construction project large or small. The contractor may want help on quantifying the material amounts or want lump sum prices in- order to mitigate risk so to protect his margin. We can help here but it's really the quantity surveyors' job to take off the materials and estimate the quantities.

4. A wide variety of engineering assistance the ability to design and issue a PS1 and sign off the PS4. The ability to design formwork and form-ties and understand pour rates and formwork pressures, ability to engineer the lifting points and supply the right lifters and inserts for both tilt-up and precast applications. Understanding incompatibility issues with bond breakers and flooring sealers or densifiers and systems that the supply house offers is paramount.

Our consultants within the field or in the office are well equipped to offer help to the contractor. If they do not have the technical information they need, they can get it immediately from us.

OUR BIG APPEAL TO THE CONTRACTOR IS:

- Our ability to keep you informed about new innovations and cost saving materials and methods
- Engineering and design assistance early in the design stage
- Pre-Tender quotes on materials
- On site and in class (School Of Concrete) assistance with the installation process
- Less time required to perform purchasing functions
- Scheduled deliveries
- Consolidated deliveries and fewer trucks to unload
- One payment involving many invoices therefore less paperwork
- Liability stops with one supplier
- More than one location

Benefit From Our Engineering and Design Expertise

STEEL FIBRE
FLOORS
(No Wire Mesh)

STEEL FIBRE REINFORCED CONCRETE (SFRC) FLOOR SLABS

Modern day distribution centres and warehouses have become very sophisticated. Clients are demanding very high performing floors. This is mainly due to higher racking systems and the increased speed of the material handling equipment. Every industrial floor has its own individual specific needs and getting the design and detailing right is not simple or straight forward.

At Canzac we understand the lower lifetime cost of an industrial concrete slab on grade and we most certainly deliver the best lifetime value. Our engineered product offering is second to none. We have a wealth of knowledge when it comes to design input. We simply know what works and what does not work. When you consider the up-front cost of the concrete slab is about 13% of the total project value.

All too often during the design and construction process, the owners or occupiers are not aware of the issues they will be dealing with in 18-24 months' time or the associated costs and down time that has to be paid for to repair badly designed and constructed concrete floors.

Many industry designers, owners, and occupiers of Canzac slabs understand our true value, lowest maintenance costs, better material handling speeds and earlier project delivery.

Our well designed detailed and constructed steel fibre floors are becoming very popular. This is due to our engineering and design expertise. Our understanding of critical control joint detailing for construction / contraction / isolation and expansion joints. Along with reinforcing detailing dowel type and spacing via our in-house load transfer programme.

STEEL FIBRE ADVANTAGES

As a rule of thumb, small fibres tend to be used where control of crack propagation is the most important design consideration. High fibre count (number of fibres per kg) permits finer distribution of steel fibre reinforcement throughout the matrix – and, consequently, greater crack control during the drying and curing process. On the other hand, because they exhibit better matrix anchorage at high deformations and large crack widths, longer, heavily deformed fibres afford better post-crack 'strength'. However, unlike shorter fibres, the dramatically reduced fibre count of longer product yields correspondingly less control of initial crack propagation.

PROPERTIES OF REINFORCEMENT

When steel fibres are added to mortar, Portland cement concrete or refractory concrete, the flexural strength of the composite is increased from 25% up to 80% - depending on the proportion of fibres added and the mix design. Steel fibre technology actually transforms a brittle material into a more ductile one. Catastrophic failure of concrete is virtually eliminated because the fibres continue supporting the load after cracking occurs. And while measured rates of improvement vary.

Steel fibre reinforced concrete exhibits higher post crack flexural strength, better crack resistance, improved fatigue strength, higher resistance to spalling, and higher first crack strength.

Additionally, deformed fibres provide a positive mechanical bond within the concrete matrix to resist pull-out.

Steel fibres are available in lengths from 38 mm to 50mm and aspect ratios between 40 and 60. The fibres are manufactured either deformed or hook-end and conform to ASTM A-8220.

Conventional practice usually concentrates welded wire fabric reinforcement within a single place of a floor slab. Fabric does very little to reinforce the outer zones, which is why spalling is common at the joints and edges.

The primary function of welded wire fabric is to hold the floor slab together after the first small hairline cracks have propagated to larger fractures. This serves to maintain some degree of "structural integrity.

Conventional wisdom's approach to floor slabs is to maintain "material integrity" through SFRC mix designs.

This "integrity is accomplished" by:

- Increasing the initial first crack strength.
- Large numbers of fibres intercepting the micro-cracks through-out the slab to reinforce isotopically, so there is no weak plane for a crack to follow.
- Unlike rebar and welded wire fabric, fires are dispersed throughout the slab to reinforce isotopically, so there is no weak plane for a crack to flow.
- Increases in flexural strength can make it possible to use a thinner slab and eliminate the cumbersome welded wire fabric.
- Whether it is for lighter duty commercial service or for heavy manufacturing, SFRC slabs are capable of withstanding any load. The only variable is the addition rate of fibre, which could be as low as 12.5kg/m3 to as high as 100 kg/m3.

HOW THEY SAVE TIME & MONEY

- Reduce slab thickness fiving savings in concrete and placement costs
- Possibilities of wider joint spacing. Save on joint forming costs and joint maintenances.
- Simplicity of construction. Simpler joints and no more errors in steel fabric positioning
- Increase speed of construction. Save time and reduce costs.

TYPICAL AREAS OF APPLICATION USE INCLUDE:

Industrial Ground Floor Slabs – Warehouse, Factories, Distribution facilities, Container hardstand areas, Aircraft Hangers, Roads, Bridge Decks, Parking Areas, Runways, Aprons and Taxiways, Commercial and Residential Slabs.

TECHNICAL & USER BENEFITS

- Significantly reduced risk of cracking
- Reduced spalling joint edges
- High impact resistance
- High fatigue resistance
- Reduced maintenance costs
- Longer useful working life

IMPROVED STRENGTH & DURABILITY

Steel fibre reinforced concrete is a castable or sprayable composite material of hydraulic cements, fine, or fine and coarse aggregates with discrete steel fibres of rectangular cross section randomly dispersed through the matrix.

Steel fibres strengthen concrete by resisting tensile cracking. Fibre reinforced concrete has higher flexural strength than that of unreinforced concrete and concrete reinforced with welded wire fabric. But unlike conventional reinforcement – which strengths in one or possibly two directions – Steel fibres reinforce so tropically, greatly improving the concrete's resistance to cracking, fragmentation spalling and fatigue.

When an unreinforced concrete beam is stressed by bending, its deflection increases in proportion with the load to a point at which failure occurs and the beam breaks apart.

A steel fibre reinforced beam will sustain a greater load before the first crack occurs. It will also undergo considerably more deflection before the beam breaks apart. The increased deflection represents the toughness imparted by fibre reinforcement.

The load at which the first crack occurs is called the 'first crack strength'. The first crack- strength is generally proportional to the amount fibre in the mix and the concrete mix design.

Two theories have been proposed to explain the strengthening mechanism:

The first proposed that as the spacing between individual fibres become closer, the fibres are better able to arrest the propagation of micro cracks in the matrix.

The second theory holds that the strengthening mechanism of fibre reinforcement relates to the bond between the fibres and the cement.

It has been shown that micro cracking of the cement matrix occurs at very small loads. Steel fibres then serve as small reinforcing bars extending across the cracks. So as long as the bond between the fibres and cement matrix remains intact, the steel fibres can carry the tensile load.

The surface area of the fibre is also a factor in bond strength. Bond strength can also be enhanced with the use of deformed fibres, which are available in a variety of sizes.

PRODUCT MIX DESIGNS

The proportions of Steel fibres in mix designs usually range from 0.2% to 2.0% (15 to 40 kg/m3) of the composite's volume. Key factors to consider largely depend on the application under consideration and or the physical properties desired in the finished project.

Mix designs with fibre proportions above 40 kg/m3 are usually adjusted to accommodate the presence of millions of steel fibre reinforcing elements. The adjustments are an increase in the cement factor, a reduction in the top size of the coarse aggregate and the addition of a super plasticiser. Prototype testing is recommended to determine the optimum design for each application.

ADVANTAGES

- Reinforcing concrete with steel fibres results in durable concrete with a high flexural and fatigue flexural strength, improved abrasion, spalling and impact resistance.
- The elimination of conventional reinforcement, and in some cases the reduction in section thickness can contribute to some significant productivity improvements. Steel fibres can deliver significant cost savings, together with reduced material volume more rapid construction and reduced labour costs.
- The random distribution of steel fibres in concrete ensures that crack free stress accommodation occurs throughout the concrete. Thus, micro cracks are intercepted before they develop and impair the performance of the concrete.
- Steel fibres are a far more economical design alternative.

Latest Technology & Product Releases for the Concrete Industry

ACCESSORIES

FAST-FORM™ ONE SYSTEM - ENDLESS POSSIBILITIES

A unique system of components that bolt together and so can be fitted by hand or in the case of our wall systems lifted in large panels with a crane.

Fast-Form is so simple to use that anyone can fit it and it's flexibility means it can be used for almost any application.

With less make up, no denailing, this is a lightweight and easy to use system that is much faster than traditional systems and simple to use with low labour skills required.

Manufactured from galvanized steel, it is both strong and durable and will last for more than 25 years. The benefits over traditional formwork methods are immense with savings in materials, time and costs - not to mention the environmental benefits.

With Fast-Form there is little or no timber wastage and is 100% fully recyclable. This greatly reduces carbon emmissions with not only the use of our system, but also reduced emissions from deliveries.

We offer the best finish on the market meaning less remedial works. Plywood is fixed from behind to prevent marks on the face of the concrete using any grade of plywood you need.

Our team of designers and structural engineers offer full colour 3D drawings, structural calculations and temporary works drawings, all included in our service.

We pride ourselves on our commitment to our customers, from fast quote and design turnarounds to our wealth of formwork experience, you are in safe hands.

CANZAC GROUP LTD AND COSINUS SLIDE JOINT

These were used on ZIWI Pet Food Project new state-of-the-art processing facility in Awatoto, 5 kilometres south of Napier town centre.

ZIWI had spent the past three years working with parties in evaluating a number of potential locations in the Tauranga region but has been unsuccessful in finding a site of sufficient size to meet their demanding needs and with the necessary infrastructure available in meeting the timeframe required.

Image: New ZIWI Pet Food Factory coming to Napier, with 125 new jobs once completed.

ZIWI will be capable of doubling their manufacturing output at their new facility. They are the largest exporter of premium pet food, with a rapidly growing $40m export-focused business.

A global leader in the air-dried pet food industry market for consumers, ZIWI exports to more than 20 countries with its main markets in the USA, Australia and a growth in China. Their range of free-range meat and seafood has struck a chord with pet owners around the world wanting nutrient-dense and digestible food for their pets. New air-dried technology and new product lines will be maintained.

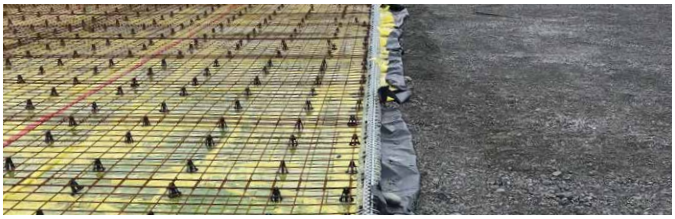
ZIWI has partnered with ANZCO Foods to form a new joint venture operation of the production of pet treats and oral health products. There is huge potential for growth along with New Zealand based, family-owned manufacturing operations and the very best of New Zealand suppliers. The new 12,000 square metre facility expansion will be beneficial to their growth and will mean new employment opportunities.

Works commenced in August of 2020 and the completion date is expected around late October 2021. Canzac was engaged by the lead design engineers from "Strata Group" and the developers at the early design stage.

Durability of the floor is optimised for shock and vibration free joint crossings regardless the speed of forklifts. Durability of the floor in such an environment is key with enhanced profitability of operators and cost savings due to ease of use.

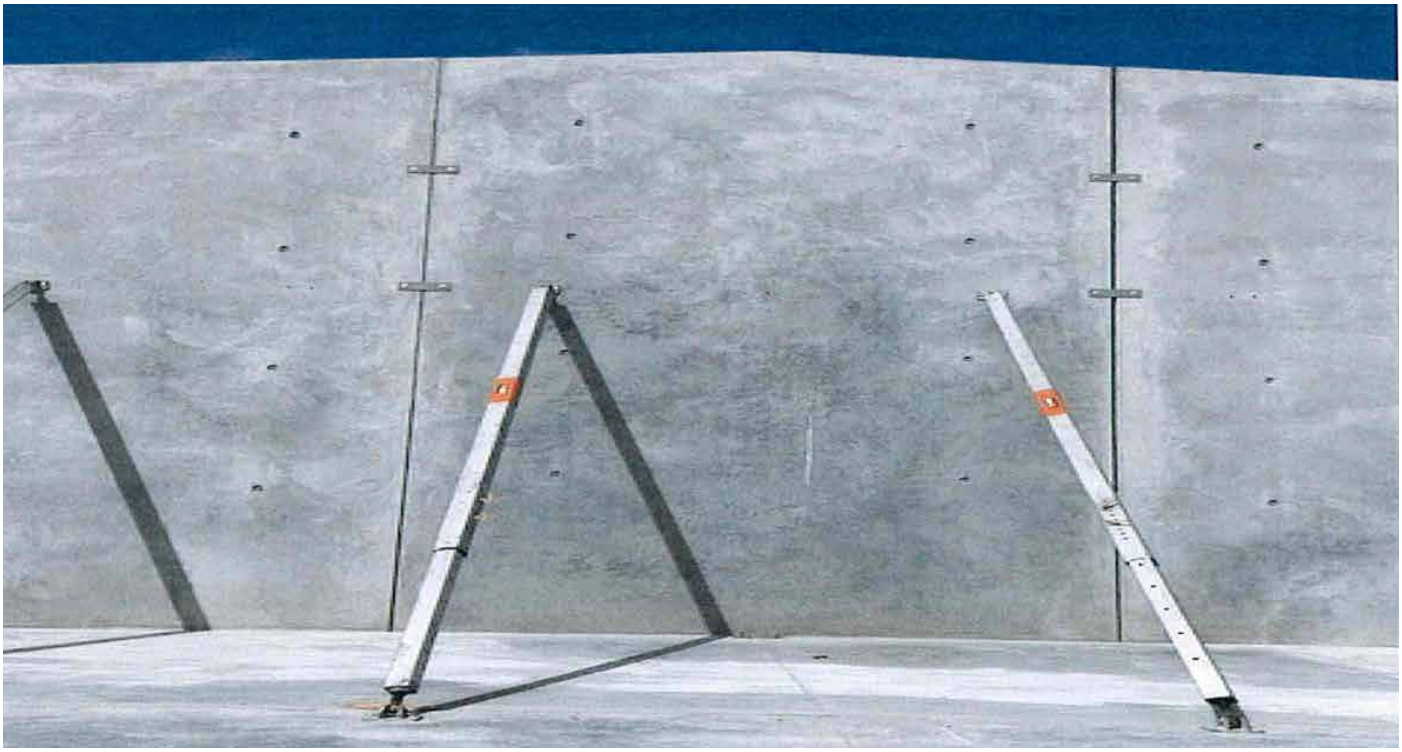
In combination with the unique load bearing capacity of the joint and floor, smooth and noiseless load transfers are created.

The Cosinus Slide is the only joint with guaranteed serviceability and structural design. A unique patented technology with the best possible load transfer system under extreme conditions thanks to the combined load bearing capacity of the joint and the floor itself.



CANZAC Goes Tilt-Up

LATEST
NEWS



Concrete Professionals Share Ways to Optimise Project Productivity Constructability Key to Concrete Projects

OPTIMISE PROJECT
PRODUCTIVITY

Construction industry professionals and observers have seen the Coronavirus pandemic as a catalyst for change. However, if the insights from the American Concrete Institute's Virtual Concrete Convention are any indication, the industry still has a long way to go to achieve the transformation in productivity seen in industries such as manufacturing.

Many of the lessons learned during the convention seemed evergreen in a good way and a bad way. It is good in the sense that the construction industry has a collective wealth of experience dealing with persistent issues related to productivity. It is bad in the sense that a 2017 McKinsey analysis of construction's productivity problem is still relevant in 2021.

CONSTRUCTABILITY IS KEY TO CONCRETE PROJECTS

Cary Kopczynski, who will serve as president of ACI in 2021-2022, says the industry's productivity narrative is "not all doom and gloom" thanks to the increased use of modular construction and prefabrication, but says concrete professionals should heed one of the seven recommendations in the 2017 report -- rethinking design.

Specifically, Kopczynski said, there is a need for a greater focus on constructability. Oscar Antommattei, chief concrete engineer and materials engineering manager at Kiewit, said early constructability considerations are important in fast-tracked projects. One example he noted was the high-profile SoFi Stadium project in Los Angeles. Kiewit was responsible for handling the excavation as well as footings and other structural components, including structural columns and a mechanically stabilized earth wall.

According to Antommattei, there was no time to follow the typical design and shop-drawing review process, and the shop drawings were underway before the engineer had the final reinforcement design. Early collaboration between the construction manager, design engineer, the main contractor and subcontractors was critical.

> Kopczynski noted that constructability does not refer to the well-executed completion and coordination of construction documents, but rather the effective integration of construction knowledge into the planning, layout, design and construction of a building. He offered one example of a project in Las Vegas that was demolished prematurely due to a failure to address constructability early in the design process.

In a more positive example is a building in Seattle. After his team chose the formwork system, they determined that columns needed to be aligned with the transverse direction across the building. That decision needed to happen before determining the location of the columns.

Mike Schneider from Baker Concrete Construction also touched on the need to emphasize formwork early in the design process. He said that even though formwork is not a "tangible" part of a finished building, it can account for more than 50% of a site-cast concrete frame. He added that applying three basic principles of formwork economy - design repetition, dimensional standards and dimensional consistency - can help designers integrate constructability into a project. However, incorporating those principles does not mean asking a designer to assume the role of formwork planner, and it does not make the structural design a "slave to formwork considerations," he said.

CONCRETE MATURITY SENSOR

BIO-INSPIRED

New research shows that patterns inspired by lobster shells can make 3D printed concrete stronger, to support more complex and creative architectural structures.

Digital manufacturing technologies like 3D concrete printing (3DCP) have immense potential to save time, effort and material in construction.

They also promise to push the boundaries of architectural innovation, yet technical challenges remain in making 3D printed concrete strong enough for use in more free-form structures.

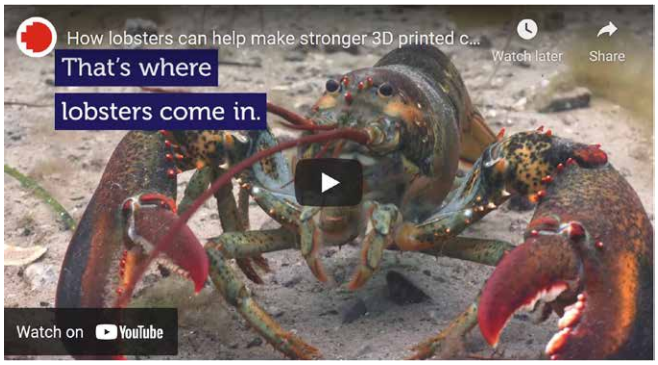
In a new experimental study, researchers at RMIT University in Australia looked to the natural strength of lobster shells to design special 3D printing patterns.

Their bio-mimicking spiral patterns improved the overall durability of the 3D printed concrete, as well as enabling the strength to be precisely directed for structural support where needed.

When the team combined the twisting patterns with a specialised concrete mix enhanced with steel fibres, the resulting material was stronger than traditionally-made concrete.

Lead researcher Dr Jonathan Tran said 3D printing and additive manufacturing opened up opportunities in construction for boosting both efficiency and creativity.

"3D concrete printing technology has real potential to revolutionise the construction industry, and our aim is to bring that transformation closer," said Tran, a senior lecturer in structured materials and design at RMIT. "Our study explores how different printing patterns affect the structural integrity of 3D printed concrete, and for the first time reveals the benefits of a bio-inspired approach in 3DCP. We know that natural materials like lobster exoskeletons have evolved into high-performance structures over millions of years, so by mimicking their key advantages we can follow where nature has already innovated."



Video: "How lobsters can help make stronger 3D printed concrete" by Carelle Mulawa-Richards, RIMT University, YouTube.

3D PRINTING FOR CONSTRUCTION

The automation of concrete construction is set to transform how we build, with construction the next frontier in the automation and data-driven revolution known as industry 4.0.

A 3D concrete printer builds houses or makes structural components by depositing the material layer-by-layer, unlike the traditional approach of casting concrete in a mould.

With the latest technology, a house can be 3D printed in just 24 hours for about half the cost, while construction on the world's first 3D printed community began in 2019 in Mexico.

The emerging industry is already supporting architectural and engineering innovation, such as a 3D printed office building in Dubai, a nature-mimicking concrete bridge in Madrid and The Netherlands' sail-shaped "Europe Building".

The research team in RMIT's School of Engineering focuses on 3D printing concrete, exploring ways to enhance the finished product through different combinations of printing pattern design, material choices, modelling, design optimisation and reinforcement options.

PATTERNS FOR PRINTING

The most conventional pattern used in 3D printing is unidirectional, where layers are laid down on top of each other in parallel lines.

The new study, published in a special issue of 3D Printing and Additive Manufacturing, investigated the effect of different printing patterns on the strength of steel fibre-enhanced concrete.

Previous research by the RMIT team found that including 1-2% steel fibres in the concrete mix reduces defects and porosity, increasing strength. The fibres also help the concrete harden early without deformation, enabling higher structures to be built.

The team tested the impact of printing the concrete in helicoidal patterns (inspired by the internal structure of lobster shells), cross-ply and quasi-isotropic patterns (similar to those used for laminated composite structures and layer-by-layer deposited composites) and standard unidirectional patterns.

Image: The lobster-inspired patterns increase the strength of the 3D printed concrete. Credit: RMIT University.

SUPPORTING COMPLEX STRUCTURES

The results showed strength improvement from each of the patterns, compared with unidirectional printing, but Tran said the spiral patterns hold the most promise for supporting complex 3D printed concrete structures.

"As lobster shells are naturally strong and naturally curved, we know this could help us deliver stronger concrete shapes like arches and flowing or twisted structures," he said. "This work is in early stages so we need further research to test how the concrete performs on a wider range of parameters, but our initial experimental results show we are on the right track."

Further studies will be supported through a new large-scale mobile concrete 3D printer recently acquired by RMIT – making it the first research institution in the southern hemisphere to commission a machine of this kind.

The 5×5m robotic printer will be used by the team to research the 3D printing of houses, buildings and large structural components.

The team will also use the machine to explore the potential for 3D printing with concrete made with recycled waste materials such as soft plastic aggregate.

The work is connected to a new project with industry partners Replas and SR Engineering, focusing on sound-dampening walls made from post-consumer recycled soft plastics and concrete, which was recently supported with an Australian Government Innovations Connections grant.

Source: RMIT University

Full study: "Influences of Printing Pattern on Mechanical Performance of Three-Dimensional-Printed Fiber-Reinforced Concrete", 3D Printing and Additive Manufacturing.

Full Study Here By Gosia Kaszubska, RMIT University

NOWADAYS ALMOST EVERYTHING IS BEING 3D PRINTED, SO WHY SHOULD ARCHITECTURE BE AN EXCEPTION?

Many architectural firms are adopting 3D printing as their preferred technique to build structures. It's a simple, efficient, and innovative technique that lowers the risks of errors, and also manages to save on time!

3D printing eradicates a lot of tedious steps during the construction process and simplifies it. It is being used to build homes, habitats on Mars, and even coral reef islands!

The potential and possibilities of 3D printing in architecture are endless and mindblowing. We've curated a collection of 3D-printed structures that left us mesmerized – from a sustainable global habitat to a house fit for Mars, we've got a little something for all types of arch lovers!

TECLA is a completely 3D printed global habitat based on natural materials. TECLA's construction started as a prototype in 2019 near Bologna, Italy as a response to pressing societal issues of explosive population growth which inevitably led to a lack of affordable accommodation.

TECLA is created using entirely reusable, recyclable materials taken from the local terrain – it aims to be a model for circular housing as well as eco-housing. The habitat has been designed by Mario Cucinella Architects and brought to life by WASP's engineering and printing tech.

TECLA is set to be the first house to be entirely 3D-printed using locally sourced clay which has been used for centuries in countries like India as a cost-effective and environmentally friendly alternative to cement clay is biodegradable and recyclable material that will make the building a zero waste structure.

> What would you print with free access to a 3D printer and resources? My imagination is running wild between custom accessories and a tiny house!

Architecture firm, MEAN* (Middle East Architecture Network), did just that and designed a complete 3D printed pavilion to welcome visitors from all over the world into the mystical desert of Wadi Rum in Jordan. Fun fact about Wadi Rum – it looks so much like the Martian landscape that it has served as a stage for multiple space movies, even for 'Rogue One: A Star Wars Story', a cult classic!

Project Examples

BiodiverCity is one of Bjarke Ingels' most recent projects, it is a city of three islands connected by autonomous vehicles for land, water, and air to make this a transport emission-free habitat off the coast of Malaysia.

Three islands will be built in Penang and will serve as cultural, business, and residential hubs. The most striking thing about the development is that all the transportation on the 4,500 acres will consist of autonomous boats, vehicles, and air travel, making the islands car-free and pedestrian-friendly.

Construction is one of the biggest sources of carbon emissions, in fact, even more than the aviation industry. So to reduce the impact on the environment, most buildings will be prefabricated or 3D printed on-site and others will use a combination of bamboo, Malaysian timber, and "green concrete" which is made from recycled materials like aggregate.

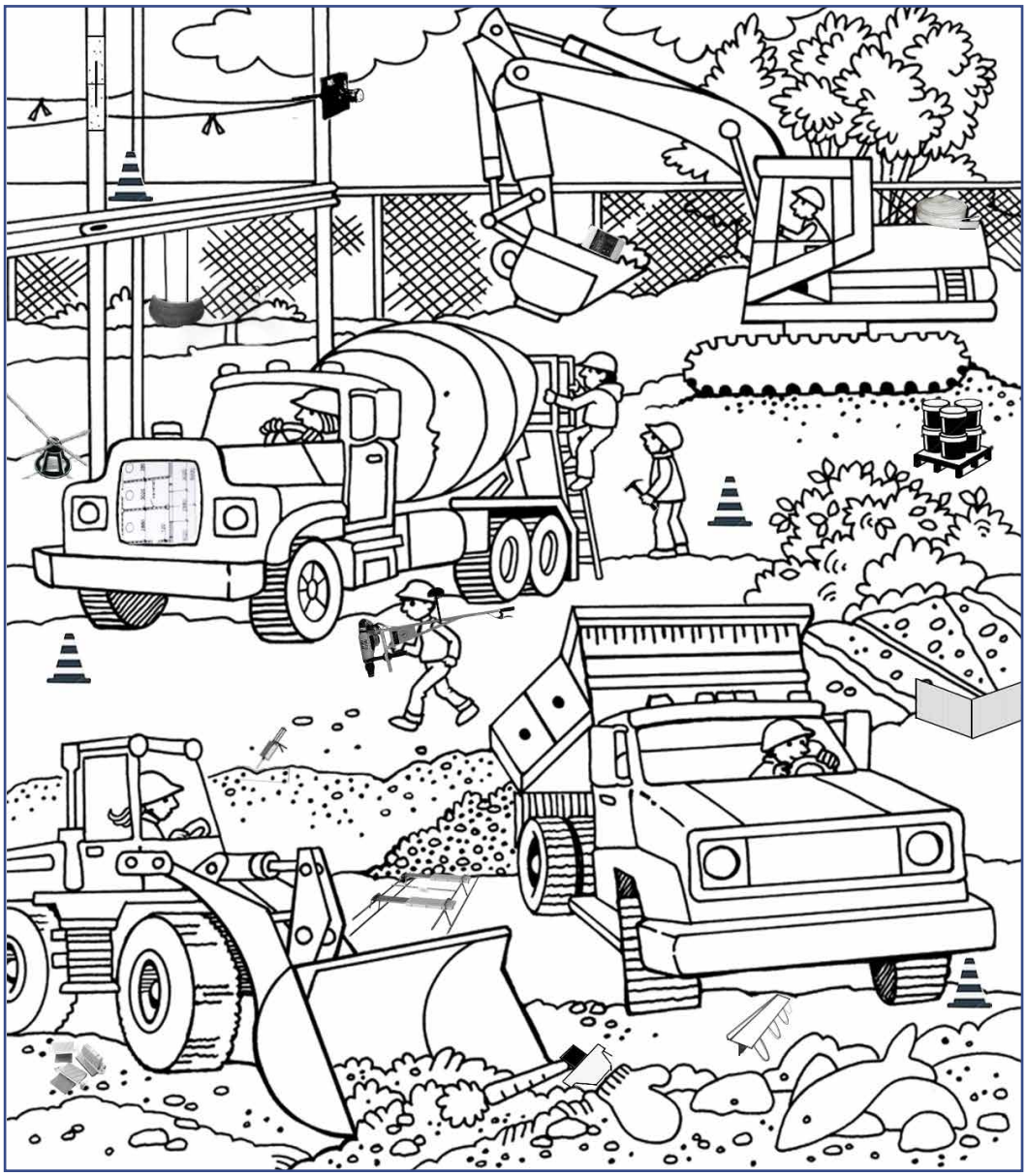
The Desert Pavilion was created to be a communal oasis of heritage and micro-ecology. When you look at the renders, the structure is a blend of local Bedouin architecture with space-age technology. The design team has envisioned an innovative use of 3D printed panels by deploying them onto a CNC bent steel pipe system. To simulate a holistic tent-like structure, the team used a hybrid of 3D printed polymer shells on 3D printed concrete topography with the 'Mesh Relaxation' parametric strategy.

Put Your Brain Cells to the Test and Win

CLEARING OUT
THE CONCRETE

UNDER CONSTRUCTION - BUSY SITE WORKS

Find ALL of these hidden objects. Colour them in or circle them. Scan/email/or post back to us with a correct entry and go into the draw to win one hell of a gift basket including your favourite beers, wines or whatever you drink! Just tell us what you want with your entry. Email it to: **info@canzac.com**

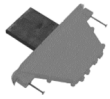


Cover Plate Joint

Road Cones x4

Back Saver

Speed Form



Dominator Dowel

Bar Chair

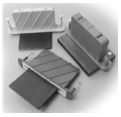
Plans

Sinak S102 Pellet

SuperTie

Hammer

Easy Foam Joint

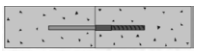


Speed Plate System

Pocket Isolation Former

10 Minute Concrete Mender

Speed Basket



Speed Dowel

Pentra Sil

0800 422 692 | www.canzac.com

LIFT PRECAST CONCRETE ELEMENTS SAFELY AND SWIFTLY WITH THE NEW INNOVATIVE PSA LIFTMX SYSTEM™

INTRODUCING THE PERFECT SYNERGY BETWEEN STRENGTH, SAFETY AND PERFORMANCE.

It's cutting-edge design reduces visual cracking, spalling and maximises smooth engagement and manoeuvring.

PSA LiftMX™, is an innovative edge and face lifting system able to lift concrete elements upwards of 125mm thick.

With a revolutionary patent-pending design, PSA LiftMX™ is proven through vigorous testing to meet numerous configurations. Suitable for commercial, residential and civil applications, PSA LiftMX™ is engineered for strength, versatility and easy use, from factory to site.

Compliant with AS3850. 1:2015 and New Zealand Good Practice Guide: Safe Work With Precast Concrete 2018 (NZGPG)

Pictured Above: 7.5 Tonne Clutch, Void Former (Compatible with all LiftMX series anchors) 5 Tonne Face Lifter (Height options for panels from 95mm to 145mm) and 7.5 Tonne Edge Lifter

PSA LIFTMX™ DESIGN FEATURES

Aside from the previously mentioned benefits, PSA LiftMX™ products are also suitable for columns, beams and thin wall precast elements. They have excellent ductility with a compact, lightweight design making it ideal for smooth maneuvering.

Proudly, PSA LiftMX™ Anchors and Clutches are constructed with high-quality steels, matched for optimum load capacity between varying points. Not only that, but the lifters are galvanized to inhibit the effects of corrosion.

Following Working Load Limit guidelines, you can be assured that PSA LiftMX™ have the capabilities and strength to make precast panel lifting easier than ever before.

Pictured Above: Void Former Recess, 7.5 Tonne Edge Lifting Anchor, Drossbach Ducting

Pictured Above: Lifting Precast Concrete Element

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