Construction News

CONSTRUCT
YEARBOOK 2021/22

CONSTRUCT Project award winner

Realtime Civil Engineering
Project: 100 Liverpool Street

Building back better

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CONSTRUCT
CONCRETE STRUCTURES GROUP

Rebuilding and Growing Concrete Structures

Dave Campbell
Trade Association Manager

I am delighted to present our yearbook for 2021/22, following a hiatus last year due to the pandemic.

It has been a quite the challenge for the sector over the last 18 months, navigating the pandemic and Brexit, and CONSTRUCT has been at the forefront of supporting its members through these turbulent times. We are now looking to the future to support our members as the industry continues to rebuild and grow.

Formed in 1994, CONSTRUCT is the voice of the UK concrete structures industry. Our association is made up of construction companies dedicated to improving the safety and efficiency of building in situ concrete frames and associated structures. In 2021 we have also expanded our focus on supporting groundworks contractors, work which many of our members already undertake, and we are growing our membership to groundworks-only contractors too.

CONSTRUCT comprises 33 specialist concrete contractors and they are responsible for almost 80% of all concrete frames built across the UK. They also account for around 30% of purchases of all ready-mixed concrete nationwide. Many of these suppliers, along with market leaders from across the concrete frame supply chain, are also a valued part of the CONSTRUCT family.

> **"It has been a quite the challenge for the sector over the last 18 months, and CONSTRUCT has been at the forefront of supporting its members through these turbulent times."**

CONSTRUCT is led by members for members. Chairman, Neil Marney of Marney Construction (see page 6 for his introduction), leads the annually elected Council of representatives who govern the association and set the strategy.

The association focuses on five key areas:

- Continuous improvement in health, safety and wellbeing for the sector;
- Provision of industry leading training for the sector;
- Fairer trading terms for members;
- Promotion and innovation of concrete as the material of choice;
- Being the voice of the concrete structures industry.

The Council and membership are supported by a Secretariat, currently led by me, with a team supporting the everyday workings of the association, including membership, events, training, accounts, and much more. Our Concrete Frame Training Forum (CFTF) is led by Robert Thompson of A J Morrisroe & Sons Ltd (see page 14 for his training strategy round-up) to help members get the best training and funding support. Dave Armsworth is our Health, Safety & Environment Manager, and leads our work in this area and runs the committee under the same remit (see his update on page 16). Dave Armsworth also supports the work of the newly-formed Groundworks Committee, which is chaired by Steve Hammond of Anderson Group. You can see the latest work we are undertaking on groundworks on page 24.

This yearbook will show you the breadth of CONSTRUCT's work and some of the key issues affecting the concrete structures industry.

It is another successful awards year, and with their absence in 2020 due to the pandemic, there were a fantastic number of entries across all categories. It is amazing to see the great projects, innovation and the contribution people in our businesses are doing to construct with excellence. CONSTRUCT is also excited to welcome the Post-Tensioning Association's (PTA) award to our event, and you will see their shortlist amongst our awards section on pages 8-12, plus the latest update on post-tensioning on page 20, too.

CONSTRUCT continues to work closely with the Concrete Centre and the Concrete Society to promote how great, reliable, and durable concrete is as a construction material, and how it can be a sustainable option. You can see more from the Concrete Centre and the industry's journey to Net Zero on page 17.

CONSTRUCT members have been facing a crisis on labour and materials shortages, and you will see a special feature on page 22 on what the association has done to date, our work with other construction wide associations including Build UK, and our plans to help members train and recruit labour, and gain access to materials.

Finally, I would like to take this opportunity to thank our CONSTRUCT Day and Awards Sponsors, and the advertisers in this yearbook for their support. The work we do is simply not possible without your involvement. Please take a moment to read more about our sponsors on page 13. I would also like to thank all members for their highly engaged approach to working with your association. Your input and support ensures CONSTRUCT remains the voice of the industry.

CONSTRUCT Supports Sector Through Tough Times

Neil Marney
Chairman
CONSTRUCT

It's been another tough year for our businesses. COVID-19 has stuck around for a lot longer than most of us would have initially thought. Brexit has added more complications for our sector, many of which are just starting to rear their heads.

Sectors across the UK have been shut for months on end, but construction has been the sector that's toughed it out. We have been running our sites up and down the country in challenging conditions for social distancing, while juggling contractual disputes, managing labour shortages and wage and material cost inflation. We've been one of the few British industries that's been contributing to the economy during this pandemic, and government has often put barriers in our way.

As for CONSTRUCT, we've continued to change our activity to support members through COVID-19 and Brexit. Over the last year, our influence on government has been more prominent than ever before. We have the ear of the Construction Minister, being on calls with her each month. We're a strong and vocal voice within the Construction Leadership Council (CLC) helping shape industry policy, collaboration and lobbying to government.

The Health & Safety Committee continues its great work to make our sites – and our people – safe. Members have come together to develop safety guidance on form ties, edge protection, and concrete plant, as well as helping members with individual health & safety issues (see more on page 16).

Since the start of this year, CONSTRUCT has also turned its focus to supporting groundworks. The first committee meeting took place in March and set out its plans to develop good practice guidance, safer working practices, and training options (see more on page 24).

Our Concrete Frame Training Forum (CFTF) has made great headway in developing new training standards for our members and has helped them claim more funds from CITB again this year.

Despite the difficult period we're going through, we are still recruiting new members. We welcomed contractor members John F Hunt and Adana Construction plus a host of supplier members in the last year, and we are seeing more members join in 2021 across all categories. It is great that the whole supply chain sees the value of CONSTRUCT membership – both what we can offer you and what you can contribute to the industry.

I know a big part of what we do is getting together – to network, to vent, to make new business partnerships – and with the pandemic that's all been on hold. We have been a year without CONSTRUCT Day, having cancelled the event in 2020, so I am really pleased that the flagship event will be launched at our amazing new venue, Tobacco Dock! I'd like to thank all of our sponsors (see more about them on page 13) and offer my congratulations to all the winners and shortlisted entries for the awards (see the entries on pages 8-12).

> **"It is great that the whole supply chain sees the value of CONSTRUCT membership – both what we can offer you and what you can contribute to the industry"**

Looking Ahead

CONSTRUCT will continue to act as the voice of members to government and the construction supply chain, and we will strive to make a difference, particularly in the face of the labour and materials crisis (see more on page 22).

CFTF will focus on helping members navigate the skills system to bring in new and competent workers to fill the labour shortage, continue its development work for new training standards, and help our members get 'bang for their buck' in training grants.

Our updated National Specialist Concrete Specification (NSCS) will be launching in the coming months, so it is in line with the latest regulations, new methods of construction, and how to specify in line with carbon reduction needs. It will also be available online, making it easier to access and easier for us to update.

Our committees for health & safety and groundworks will continue to provide the latest guidance, resources, and support for our members to navigate a complex operating environment.

CONSTRUCT is also about to embark on a new chapter with its Secretariat, as Build UK will be winding down the secretariat services it provides to CONSTRUCT and the other associations it manages. We will be continuing to work with Dave Campbell and the Build UK team until the end of the year to deliver to our strategy, and the CONSTRUCT Council and I are finalising new arrangements to continue providing everything our members need in 2022 and beyond.

We're not out of the woods yet with COVID-19 or Brexit, but CONSTRUCT will continue to be the voice of members. Keep talking to us about the problems you're facing, to help us help you, and together we can make our industry better.

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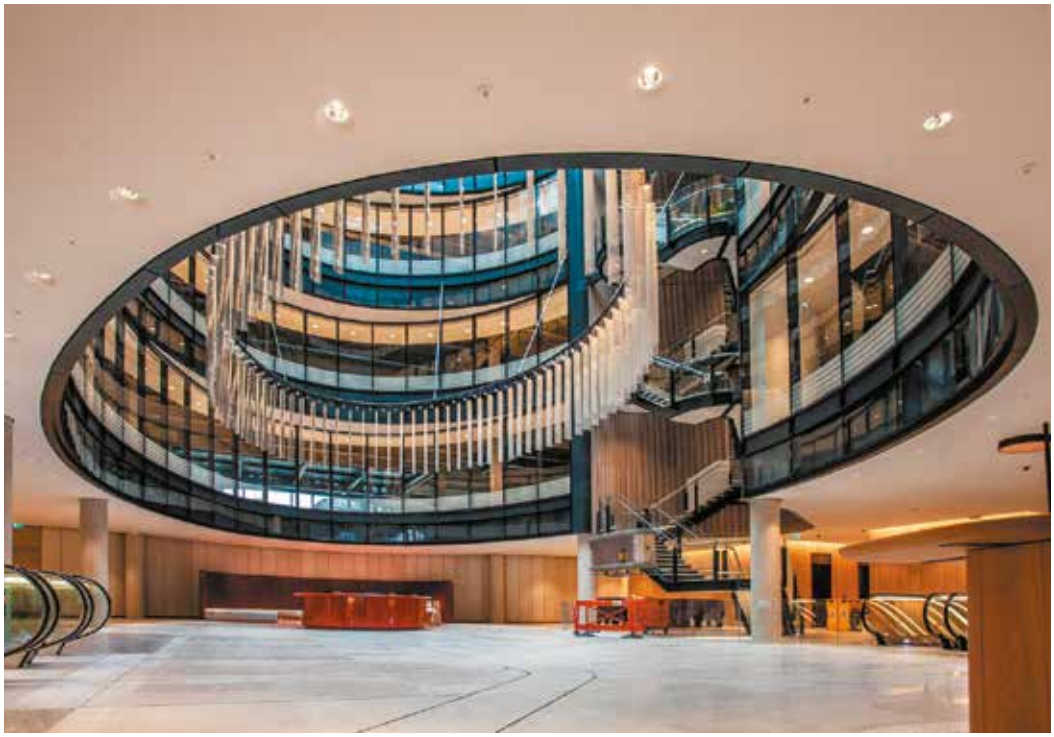
Introducing the CONSTRUCT Awards

CONSTRUCT DAY 2021

CONSTRUCT runs annual awards for its members, recognising excellence, capability and inventiveness in concrete construction.

The awards cover a wide spectrum of activities associated with structural concrete. Previous winners have won because of new techniques overcoming specific challenges, innovative products and approaches that contribute to concrete construction, or the sheer scale of the projects delivered.

The winners of the awards are announced at the CONSTRUCT Day every year and we are delighted to share the winners for this year.



Projects

access Construction

Award sponsored by:
Access Construction
This category looks at a structure or component of the structure, including major works, novel techniques or radical design.

Projects should demonstrate:

- Process and product innovation
- Overcoming complexity
- Exceeding client expectations (cost/time)
- Repeatability
- Use of technology

Winner: Realtime Civil Engineering
Project: 100 Liverpool Street

The 100 Liverpool Street project was a redevelopment of an existing eight storey building, retaining one third of the original structure, re-building to a new 12 storey building with Commercial Units to Ground floor, Level 1 & 2, with Office space from Level 3 to 11 and a plant space on Level 12. The entire south elevation was demolished down to B2, enabling a tower crane to be cast below B2 at the southwest corner. Pockets of the south building around the central areas were retained at various points between ground floor and L7, and a second Tower Crane at the southeast was hung from the L2 existing steel frame.

The north building had an existing TFL bus depot as part of the building at the Ground Floor. This was operational at the start and end of the project, meaning works had to be planned and coordinated to allow buses to remain operational. At Lower Ground Floor through the north and south building were a series of shops that formed part of Liverpool Street Station that remained open throughout the project.

Realtime faced a number of challenges as a result of having to work so closely to one of London's busiest railway stations, Liverpool Street. A lot of work had to be carried out at night, or where practical, in enclosed areas that would subsequently require acoustic screening to reduce the noise to the surrounding public.

The judges recognised the challenges Realtime would have overcome to complete this project and to the extremely high standard it was completed, and understood the dedication and commitment required to achieve a project of this complexity. This impressive and visually stunning structure is a well worthy winner of the Projects award.

> **"Realtime faced a number of challenges as a result of having to work so closely to one of London's busiest railway stations"**

Highly Commended: PERI
Project: Werrington Grade Separation Scheme

At a cost of £1.2 billion, the Werrington Grade Separation Scheme is a large infrastructure project that is making way for a new diveunder railway line, which will increase rail capacity and improve journey times on the East Coast Main Line. It is the UK's first-ever curved jacked box portal proposed by main contractor Morgan Sindall, which demanded unique construction methods and high-quality systems to deliver them. Top down and open cut methods would have been the traditional methods used on a project like this. However, to ensure that disruption was kept to a minimum, a tunnel portal was constructed offline alongside the existing railway line. So that multiple lines can run independently of each other, the central section, comprised of the diveunder, was constructed using a cut and cover curved box jack method and heavy-duty propping to allow the new tracks to pass under existing railway lines.

This has involved excavating the ground to form an offline jacking slab on which the UK's first curved portal box was constructed and later jacked into position. The box jacking method has minimised disruption to live tracks and resulted in greater cost savings compared to other methods that were initially considered. Once the reinforced ground slab was in place, the remaining structure of the tunnel, including the 1m thick roof slabs and walls had to be built in situ.

PERI's global expertise in tunnelling and infrastructure combined with efficient temporary works systems gave them a great advantage on this project.

The judges were particularly impressed by the complex formwork systems used on this project, which were executed extremely well. They also recognised the proficiency of the tunnel portal to complete such challenging works, making the Werrington Grade Separation Scheme a highly commended project.

> **"The judges were particularly impressed by the complex formwork systems used on this project"**

Shortlisted Entries

Byrne Bros – Wood Wharf

Expanded – London College of Fashion

MPB Structures – Creative Arts Building

See more on each of these projects on the CONSTRUCT website
construct.org.uk

Health & Safety

ISCHEBECK TITAN

Award sponsored by:
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This category can be an individual or company implementing a new policy or procedure making a difference in the industry.

Entries should demonstrate:
- Beneficial impact
- Practicality/implementation
- Suitability for replication
- Innovation
- Reduction in down-time
- Influence on company's safety culture

Winner →
John F Hunt
Project: Competency Cloud System

The ability to ensure that those on site have the correct competencies and that these are in date at the time of works is a critical part of putting operatives to work. Although all companies run a training matrix of sorts this information is not always easily disseminated or available to the supervisor at the work front tasking individuals on site to carry out working activities. John F Hunt (JFH) has adopted the Competency Cloud System. This is a QR code based system that is displayed on the hard hat of operatives. This code is issued at induction and when scanned with a mobile device will display an operative's competencies such as CSCS, CPCS, IPAF, working at height, and face fit testing and the expiry dates of these. The QR code is linked to the company cloud-based training matrix. The matrix itself has additional features such as when competencies are uploaded this will automatically be cross-referenced with the CITB card checker, providing protection from fraudulent documents. This also ensures issues such as lost cards can be allowed for as an operative's CSCS or card registration details can be entered and the system will automatically check online card databases such as the CSCS card checker for information.

JFH has integrated the use of this QR code system into the daily activity briefing in such a way that the supervisor will check competencies via the QR code as operatives are tasked off to perform their specific roles for the day. The use of this system ensures that projects continuously monitor their training on site in line with the ongoing activities, ensuring that operatives are never put to work without the correct training.

The judges heavily praised this innovative system, and believed that it has the potential to become a universal system across the whole industry.

> **"It has the potential to become a universal system across the whole industry"**

Shortlisted Entries

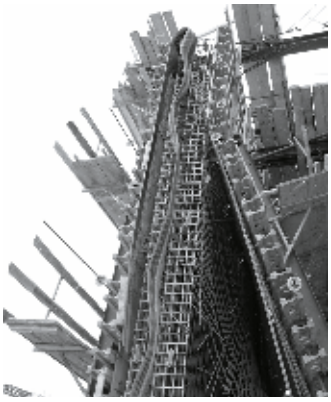
↑ **A J Morrisroe & Sons – COVID Safety Video**

↑ **Doka Construction – Safe Cladding Screen**

See more on each of these projects on the CONSTRUCT website
construct.org.uk

Highly Commended →
DY.CO
Project: Form Tie Safety Campaign

The judges were very impressed that DY.CO identified the serious issue of non-specified or copy products that are not of the same quality or do not adhere to the same technical standards or testing of the original specified product. DY.CO was praised by the judges for tackling this issue, and they were particularly impressed by how DY.CO approached the safety campaign. By delivering toolbox talks, DY.CO was able to reach a larger audience, which resulted in the campaign having a greater impact on the industry.



> **"By delivering toolbox talks, DY.CO was able to reach a larger audience, which resulted in the campaign having a greater impact on the industry"**

Unsung Hero

This award is all about a person that makes a real difference, including on a particular project or product.

It was obvious he had a work ethic of someone well above his age and experience

Winner →
Chris Wheelwright
Anderson Group

Chris joined Anderson Group 22 years ago and has played a role in getting the company to where it is now. After leaving school Chris took on numerous casual work appointments, eventually joining Anderson Group in 1999 as a Junior Site Setting Out Engineer.

He was quickly recognised as someone that had a full career ahead of him and it was obvious he had a work ethic of someone well above his age and experience.

Within two years of Chris completing his college course he was promoted to the role of Senior Site Setting Out Engineer and once again excelled at everything he set his hands to. Chris has a clear passion for the industry and is keen to get the job done, on time, to spec and within budget on every occasion. He has a very proactive approach to all that he does and consistently

produces over and above the required standards.

He excels in his field, which currently involves planning for both tender and preconstruction phases including programming, resourcing labour and ordering materials. He also plays a huge part in supporting other members of the production team and has become a valuable member.

The judges felt that Chris' commitment and dedication to his work and the company should be praised and recognised, and is therefore a worthy winner of the Unsung Hero Award.

↑ Highly Commended:
Ovi Gradinaru
J P Dunn Construction

The judges recognised that Ovi had made a significant impact at J P Dunn Construction and how passionate he is about his work and industry. Ovi has helped to increase the level of safety, health and environmental performance year after year through his passion and determination to improve all aspects of SHE performance Therefore, the judges highly commended Ovi for his contribution to the sector.

Young Achiever

Award sponsored by:
RMD Kwikform
This category is for younger individuals to be recognised for their outstanding achievements.

He showed a great work ethic and willingness to learn with a 'nothing is too much trouble' attitude through the entire project

Winner →
Max Turner
Anderson Group

Max initially joined Anderson Group in 2016, enrolling on its two-year groundwork apprenticeship. During the apprenticeship, Max was given the opportunity to experience various roles within the company's site-based teams. He showed potential from an early stage and had a keen interest in becoming a Site Setting Out Engineer. During his apprenticeship Max worked hard, striving to be the best he could, knuckling down and proving that he was a valued member of a groundwork gang. While doing this he took every opportunity he could to get involved with the process of setting out, which was over and above the requirement of his job role. On successful completion of his groundwork apprenticeship, he was offered a position as Trainee Site Engineer.

He was given the role of Junior Site Engineer on one of our more demanding and technical RC

frame projects in East London. He showed a great work ethic and willingness to learn with a 'nothing is too much trouble attitude' throughout the entire project. Max is currently working on one of most prestigious groundworks and civil engineering developments in Haverhill.

The judges agreed that Max is clearly a very dedicated and ambitious young man, with an excellent attitude and superb work ethic. This is demonstrated by the amount of responsibility given to him so early on in his career, and no doubt he will go on to have a successful career in the concrete structures sector.

↑ Highly Commended:
Richard Olaniyi
J P Dunn Construction

The judges praised Richard's initiative and ambition, as he is already taking responsibilities on outside of his role as a Construction Civil Engineering Apprentice. Richard was highly commended by the judges for being an inspiration to young people joining the construction industry, at such a crucial time for the sector.

An inspiration to young people joining the construction industry, at such a crucial time for the sector

Post-Tensioning Association Award

Award sponsored by: Post-Tensioning Association

This year, CONSTRUCT has partnered up with the Post-Tensioning Association to present to the Post-Tensioning Association Award. This award aims to recognise excellence in post-tensioning design and execution.

Entries should demonstrate:

- Well applied post-tensioning
- Innovation
- Sustainability
- Value for money

Winner: PSC
Project: The Marshall Building

The Marshall Building is a new building for the London School of Economics Estate. It consists of a double basement formed in reinforced concrete and a 10 storey post-tensioned (PT) superstructure above. The concrete is entirely exposed throughout, with large, impressive PT transfer beams at Levels 1 and 3, known as "the tree beams". The building has large, open plan communal areas with maximum floor plans and minimal surface finishes. The PT structure itself provides the centre point and main aesthetic for the building. The tree beams act as transfer beams to allow the column grids to rotate by 45 degrees between floors and accommodate the floor plans required by the client. They also create an impressive atmosphere with their grand scale, reaching 7m at their highest point, with the sloping transfer beams tapering from 3.5m deep at column locations to 1.5m mid span, creating clear typical spans of 15m.

The judges admired this project for its complexity, as PSC chose to build a PT structure rather than flat slabs, which makes for a more challenging project. They recognised the project to be a good use of PT and were also impressed by the intricacy of the build, making The Marshall Building a well worthy winner of the PTA Award.

Highly Commended: CCL
Project: University of Warwick

The University of Warwick's Faculty of Arts building, due to be completed in time for the 2021 academic year, will bring all the departments together under the same roof for the first time. The design for the new faculty includes four wings of varying height, connected by a central atrium circulation space and a double height lecture theatre with a large span. CCL developed a solution to replace the original design of steel beams with post-tensioned (PT) concrete transfer beams and converted the RC slabs to PT. The design has reduced cost, complexity, material consumption and the number of trades involved in the project, bringing significant value and sustainability benefits to the project.

The judges were particularly impressed by CCL's idea to convert RC slabs to PT, as this meant that the foundation design was easier to operate.

Shortlisted Entries

BG&E – Shard Place

Interspan – St Johns Quarter, Manchester Goods Yard

PRAETER – Soho Place Plot A

Meet the Judges

Geoff Taylor

Geoff Taylor graduated, trained and qualified as a civil engineer. In the mid-1980s he moved into property development and has remained there since. He survived and graduated from Harvard Business School in the mid-1990s. As a client he believes in as simple and straightforward approach as possible with clear written communications between parties. A good project starts with a good brief and continues with good documentation.

Jenny Burridge

Jenny Burridge is head of structural engineering at The Concrete Centre where she provides advice on the efficient and effective use of concrete. She has more than 30 years' experience in the construction industry, and has previously worked for Arup and AECOM designing award-winning buildings. She also sits on the CONSTRUCT Council.

Kathy Calverley MBE

Kathy Calverley is Managing Director of The Concrete Society, an independent membership organisation. She worked in the cement and concrete industry for over 40 years, becoming the first female Society President in 2001 and joining as managing director in 2011. In July 2018, Kathy was awarded an MBE for services to the construction industry.

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TITANs of temporary works solutions, our engineering expertise and extensive range of formwork, falsework and safety screen systems brings just about everything you need for your concrete frame construction and civil engineering projects. Renowned for our sales, R&D, technical and onsite support service, quality and confidence is inherent on every project.

Post-Tensioning Association

The Post-Tensioning Association is the trade association for all those designing and constructing post-tensioned structures in the UK. Our objectives are to promote the use of post-tensioning in buildings, bridges and other structural types throughout the UK construction industry, and to promote best practice in the design, procurement and execution of post-tensioned structures.

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John F Hunt

CFTF: The Voice for Training on Concrete

There are challenges ahead but the Concrete Frame Training Forum continues to help promote a workforce fit for the future of the concrete structures industry

Robert Thompson
CFTF Chairman

Like so much over the past year, training has had to change, adapt and innovate through the pandemic. CONSTRUCT's Concrete Frame Training Forum (CFTF) has been leading the charge on this for our part of the sector.

I took over the CFTF Chairmanship from Steve Hammond, who stepped down during the pandemic as his business moved away from concrete structures, but I'm pleased to see he and Anderson Group are still heavily involved with CONSTRUCT and the CFTF, and he now chairs the newly formed Groundworks committee, which also has a remit for training (see more on page 24).

As the Training Manager for A J Morrisroe & Sons, I can say that training and skills is at the heart of our organisation, and we recognise the benefits of working collaboratively with other CONSTRUCT members, to make training more effective for all of us working in concrete structures.

The Voice On Training For Concrete

Since COVID-19 hit us in March 2020, much has had to change. CFTF refocused its efforts to assisting members with advice on how to train through the pandemic, and took a lead role in the industry to lobby the card schemes, including CSCS, CPCS and NPORS.

Our efforts have ensured that our workforce could continue to access sites while CITB HS&E Test centres were closed, even if their cards had expired.

We worked with CITB to get the health & safety test available digitally until test centres were back up and running, and brought flexibility to courses that require re-taking or renewing, including Site Safety Plus (SSP) courses such as Temporary Works.

We secured additional flexibility to the CITB grant scheme to ensure that members didn't miss out on funds for training, particularly while many training coordinators were furloughed.

We were also heavily lobbying to ensure the CITB Levy did not cause cashflow issues for members while unable to train during lockdowns, which led to Levy payment holidays and a reduction in Levy liability in 2021/22.

However, these changes have affected CITB's income, and the organisation has had to go through significant changes. Therefore, we and the wider supply chain have ensured that grants aimed directly at employers have been prioritised. Overall, they have responded well in supporting construction businesses during COVID-19, but they haven't always got it right. We have pushed back on areas like the Additional Plant Unit Grants that were removed, and we successfully pressured CITB for their reinstatement.

We have continued to take the government, Construction Leadership Council (CLC), CITB and the major contractors to task to ensure that our members can continue to operate and seek inventive ways to support industry training. CFTF will continue to be an influential voice for members on training, education and skills issues, and I know that it is central to CONSTRUCT's mission too.

Preparing For The Return To Face-To-Face Training

Of course, running face-to-face training through the CFTF has been a real challenge over the last 18 months. However, we haven't wasted that time. Instead, we have been working with members to develop new training standards specific to the concrete structures industry.

There is now a full suite of Formwork Training Standards, which means employers can claim funding from CITB towards them and ensure the training you receive from your formwork suppliers (or others) is being delivered to a recognised industry standard, shaped by CONSTRUCT members.

Work is still ongoing for a concrete-specific temporary works course, which will supplement the SSP course for those with a specialisation in concrete structures. This will also attract grants once approved, and we will be running courses for our members and the wider industry.

As always, CFTF will respond to our members' needs too. We regularly canvass members for details of the type of training they need, and will work to deliver courses where it is demanded and ensure we can deliver programmes specific to concrete structures not readily available in the market.

Securing Our Future Labour Needs

Attracting new talent into the sector is another significant hurdle for us to overcome, following the pandemic and Brexit. You can read more about this issue on page 22, which delves into the reasons for the labour crisis. Foreign labour recruitment aside, I would like to explore some of the initiatives that are already happening to tackle the shortage, and CFTF's plans to help bring more people into the sector.

It's important to note that the labour shortage is not a phenomenon only being felt by the concrete structures industry, but across construction, and indeed, the wider UK economy. We are all competing to attract from a smaller pool of entrants, and it means we need to be smarter about the way we do it, as well as facing up to our industry's cultural propensity to look for qualified staff over a vast investment in new entrants. I know we are all taking on apprentices, but without access to EU labour, industry will have to do considerably more.

Committing to taking on apprentices is all well and good, but we have a high dropout rate in our sector, and that's if we can get people to apply at all. The concrete structures industry is one of the most physically demanding parts of construction. We need to get the right people into the 'funnel' through initiatives that allow new entrants to try out the work, before we invest in apprenticeship programmes.

We also need an increased flow of potential entrants for us to find those with the best potential and indeed, those that want to 'stick it out'.

So how do we make this happen? Firstly, we are working with our construction industry colleagues to lobby government for changes to the schemes that are already in action. The Kickstart scheme is one example that needs reform. It is narrow in its scope, with a single route to advertise through Job Centre, and does not allow for businesses to advertise the Kickstart training programme with a potential job opportunity upon completion.

The CLC has already launched the Talent Retention Scheme (TRS), which aims to keep displaced talent in the construction industry, and the newly launched Talentview will be the hub of all opportunities for potential new entrants, including work experience, traineeships, apprenticeships and entry level roles. I encourage every business to use these tools by putting up your vacancies and opportunities – both systems are free to use.

Talentview is designed to work alongside Go Construct, which is the hub of careers information for young people, and we have been working with their team to update the occupations, so they are in line with current job roles and salary expectations.

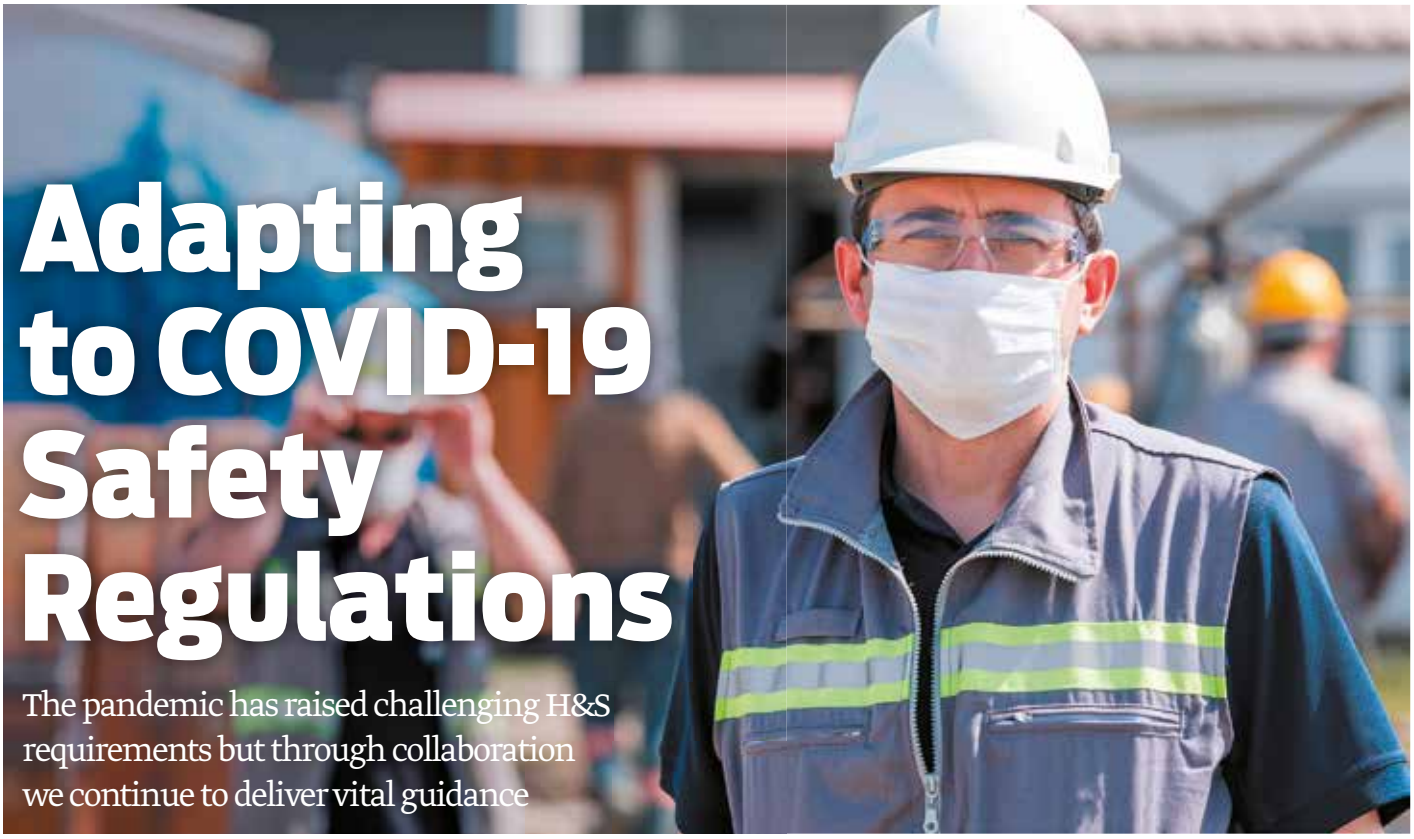
CFTF has produced a suite of resources that our members can use to deliver careers talks in schools, all aligned to the Key Stage 3 curriculum. We are also encouraging our members to register with STEM Ambassadors (which now incorporates Construction Ambassadors) so they can deliver it in a consistent way to other companies all across the UK.

Between 2021 and mid-2024, CITB aims to increase England's construction talent pool through Onsite Experience hubs, creating a talent pipeline to meet the needs of local construction employers and enabling construction career opportunities for people from local communities. Nine hubs have been approved to enable over 5,100 people to become employed and site-ready, and at least 2,500 people to secure sustained employment within the next three years. We need to engage with these hubs to access this pipeline of new talent, but at present these hubs do not cover all of the UK, with noticeable voids for London and the South East. We will be pushing CITB to launch hubs in all areas of the UK as soon as possible.

CFTF is also scoping out the opportunities to work with colleges and other training providers to deliver traineeship programmes and 'bootcamps' that give young people the opportunity to try out concrete structures and groundworks work. This coupled with the hubs, should help bring in young people who are both of the right calibre and have the right attitude to become apprentices.

An Industry Working Together

Getting the labour we need and giving them the right training and support may seem a daunting task. That's why working collectively, we have a real opportunity to access quality training that's guided *by* industry, *for* industry. I encourage CONSTRUCT members and non-members alike to work with CFTF in the coming months to ensure we have a workforce fit for the future of the concrete structures industry.



Adapting to COVID-19 Safety Regulations

The pandemic has raised challenging H&S requirements but through collaboration we continue to deliver vital guidance

Dave Armsworth
CONSTRUCT Health, Safety & Environmental Manager

In the last edition of the CONSTRUCT Yearbook, there was a large focus on Mental Health. CONSTRUCT had delivered Mental Health First Aid training to over 100 employees across the membership. Alongside this, the more informal 45-minute toolbox talk from Building Mental Health, was delivered to operatives too; all the while there were efforts by CONSTRUCT members to get their staff qualified in order to understand how we do (or don't) tick. So, looking back over these last two years it can be hoped that this training, both direct and collaboratively, has helped build a degree of resilience for us all to have coped better with what the pandemic has, and still is, throwing our way. I would also like to take this opportunity to pay thanks to the Lighthouse Club for all of its hard work in supporting the industry through this challenging time.

'Hello, hello, erm can you hear me? You're on mute!'; 'I can see your mouth moving but nothing is coming out'; 'How did you get that picture of a beach in your background?'

Sound familiar? The joys of figuring out Zoom, all while your pets are going mad and you have seven Amazon deliveries turning up. It seemed that overnight the world became so reliant on the internet. Zoom was downloaded 600,000 times in one single day during the pandemic. This change to the way we work and how employers were to carry out their duty under Health & Safety at Work Act still raised a good few questions, such as, "are Display Screen Equipment assessments still needed at home?; do we need to ensure that we supply the same level of IT that is available within the office?; what about slips, trips and falls?"

CONSTRUCT Health, Safety & Environment Committee Meetings (HS&E) meetings continued to be held and proved to be a valuable platform for our COVID-19 questions and concerns to be shared, and this network led to members implementing their findings at home, in the office and on the construction site. Some great collaborative work was done with CONSTRUCT and Build UK to help shape the Construction Leadership Council's Site Operating Procedures, and each new iteration (there was scope for interpretation at times). Our membership was asked how they were continuing to be productive while keeping all their staff safe, and in a way we were seen to be leading the way in mitigation measures on sites. All the while we maintained our focus on the daily risks to health & safety; the new COVID-19 risk assessments were not drastically different to how health & safety in construction is usually carried out, and after the dust settled it was down to taking a risk based approach.

CONSTRUCT has been seen to be leading the way in publishing guidance, which allows clients to understand how H&S can be managed on a concrete frame construction site. In particular, collaborative work was done with a small working group looking at edge protection management, including a robust but achievable inspection regime. There were several renditions of the document due to the need to get it right

before publication. The final drafts were also shared with Tier 1 contractors who also need to understand their responsibility under Temporary Works, and the guidance supports this. The latest question our members are asking is how we can reduce the risk of material falling from height, in particular edge protection components and falsework situated near to leading edges on high rise buildings where the likes of exclusion zones may not be effective mitigation. The HS&E Committee is looking to share further guidance on this in due course.

The Formwork Suppliers Group has also been working proactively. Investigation work was carried out on several incidents where formwork/falsework had failed, demonstrating that more attention was needed where training and awareness is concerned. Various training standards have been developed during the last two years and are now approved for delivery. Delivery of toolbox talks and attendance at the likes of the Temporary Works Forum meetings have also proved to be valuable avenues of approach to spread awareness. This is, however, an ongoing issue and as we find that material prices are rising there is an increased likelihood that others will enter the market. Reports of cross contamination of products has not helped the situation from an assurance point of view, but in order to combat this the likes of load sensing equipment that help to monitor the reaction and performance of the form tie systems could be employed to mitigate failure.

Looking forward, we expect to continue working collaboratively with our member HS&E representatives in order for CONSTRUCT as a group to keep delivering tangible guidance documents and represent the membership with your requirements at the forefront.

To keep up-to-date on health, safety & environment issues, visit CONSTRUCT's Toolkit area of the website. www.construct.org.uk

UK Concrete and Cement Industry Roadmap to Beyond Net Zero

Jenny Burridge
Head of Structural Engineering – The Concrete Centre

The consequences of climate change are now becoming clear. The International Panel on Climate Change (IPCC) has recently confirmed that human activity is changing the climate in unprecedented and sometimes irreversible ways. Government has committed to deliver net zero emissions by 2050 and the actions we all take today and over the next decades will determine whether we succeed. Last October, the UK concrete and cement industry published a roadmap to beyond net zero by 2050, meaning that it will remove more carbon dioxide from the atmosphere than it emits each year.

Concrete, and the cement used to make it, are essential materials for our economy and our way of life. New homes, schools, hospitals, workplaces, roads and railways, as well as the infrastructure that provides us with clean water, sanitation and energy, all require these materials.

We have an opportunity to deliver a net zero concrete and cement industry, reduce emissions from the built environment and support the delivery of the government's net zero target. We also have the potential to deliver beyond net zero by 2050 – removing more carbon from the atmosphere than we produce each year. The cement and concrete industry has a strong track record having already delivered a 53% reduction in absolute carbon dioxide emissions since 1990 – decarbonising faster than the UK economy as a whole. UK concrete and cement currently accounts for around 1.5% of UK carbon dioxide emissions, which is five times lower than the global average where cement accounts for around 7% of emissions.

The concrete and cement industry's new roadmap represents an exciting and major new milestone for our sector. For the very first time our pathway to beyond net zero is clearly set out, with an achievable and viable route that uses seven key decarbonisation technology levers.

We are committed to building on the reductions made over the last 30 years. This is why the UK concrete and cement industry has prepared a detailed and viable roadmap that sets out a clear pathway to reduce emissions to beyond net zero. This is a huge challenge and achieving net zero will require the wholesale decarbonisation of all aspects of concrete and cement production, supply and use. The concrete and cement industry as one sector alone cannot deliver net zero and we will only be able to go beyond net zero with concerted support from government, as well as with significant change across the wider construction, energy and transportation sectors. The UK needs to achieve net zero by reducing emissions from all of the materials manufactured and used in the UK without the risk of 'carbon leakage', where manufacture is moved away from the UK so that it does not appear in our carbon budgeting. Carbon leakage not only moves production emissions offshore but also investment, jobs and economic value, so it is false accounting to use the import of construction materials to reduce UK manufacturing emissions yet increase global emissions.

UK carbon dioxide emissions from concrete and cement were 7.3 million tonnes in 2018; around 4.4 million tonnes of this was 'process emissions' from clinker production, 2.2 million tonnes from fuel combustion and the

> **"We have an opportunity to deliver a net zero concrete and cement industry"**

remainder from electricity use and transport.

The principal ingredient in Portland cement is clinker and clinker production is the main source of carbon dioxide emissions. These arise from the combustion of fuels in the kiln and from 'process emissions' which are a by-product of the chemical reaction that makes clinker. This makes decarbonisation more challenging than simply switching fuel sources, which is the only option for many other industries. The industry has taken considerable early action and the 53% reduction in CO_2 emissions since 1990 is due to investment in fuel switching, changes in product formulation, and energy efficiency including plant rationalisation.

We believe that for the UK to provide a robust account of its progress to net zero it needs to take responsibility for emissions from both materials and goods produced in the UK as well as those that the UK imports and consumes. A significant shortcoming in UK net zero legislation is that emissions targets can be met or partially met by simply offshoring emissions. It has been shown that the UK is increasingly offshoring its environmental responsibility, including in the concrete industry, although the quantities imported are still low.

Concrete and cement can also make an immediate contribution to UK greenhouse gas accounting by the adoption of a national carbonation factor. The Material Produces Association (MPA) is working to demonstrate to the UK government the quantum of carbon absorption provided by the carbonation of UK concrete to establish this national carbonation factor.

The UK concrete and cement industry is already committed to transparency and publishes reports detailing its environmental performance, including CO_2 emissions, every year. The changes needed to enable the industry to meet our beyond net zero emissions target will require a collaborative approach, working proactively with all levels of government and local policy makers as well as the wider construction, energy and transportation sectors. As an example, the MPA is currently working collaboratively to develop, test and demonstrate low carbon multicomponent cements. Additionally, in partnership with the Department for Business, Energy & Industrial Strategy (BEIS), the MPA is trialling innovative fuel mixes involving biomass, hydrogen and plasma technology to demonstrate that a 'net zero' fuel mix, with no reliance on fossil fuels, is possible. Moving forward, the industry will report progress against the projects and innovations that will enable the carbon reduction contribution of the technology levers detailed in our roadmap to be realised.

A Net Zero Built Environment – A Concrete Commitment

Concrete is the world's most versatile construction material and is essential for our economy and our way of life, now and in the future. The whole-life performance credentials of concrete, including being 100% recyclable at end of life, mean that concrete is an essential part of a sustainable, circular, net zero economy. Since 2008 the concrete and cement sectors have been working, alongside other constituent materials such as aggregates, admixtures and reinforcement steel, as part of the concrete industry's Sustainable Construction Strategy.

The strategy reports on a number of indicators associated with industry performance including CO_2, and to date has focused on actions that are in the direct control of the industry. Through The Concrete Centre, the industry supports proactive engagement with clients, specifiers and constructors to provide technical best practice. This enables professionals working across the built environment lifecycle to design in concrete and achieve the highest sustainability standards and meet design codes.

A key focus of this industry investment is to promote the efficient use of concrete and cement as well as aid the construction of low carbon buildings and infrastructure. Moving forward, we are producing an updated revision of the UK Concrete Sustainable Construction Strategy to take us to 2030, which recognises the need to accelerate the adoption of lower carbon concrete. These lower carbon materials are being produced and are widely available now, but current uptake is slow in certain parts of the UK, and we are making

FIGURE 1:
THE SEVEN LEVERS FOR CHANGE

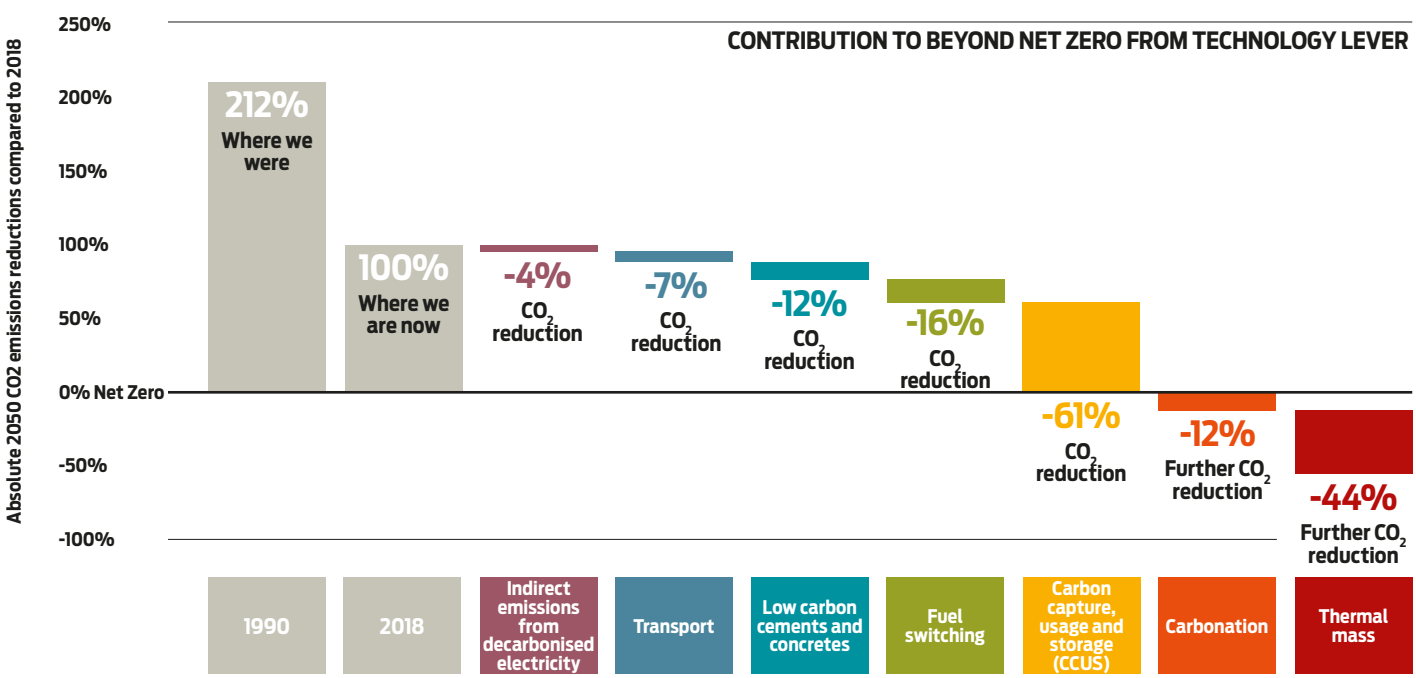


FIGURE 2:
WHERE THE SAVINGS CAN BE MADE

Indirect emissions from decarbonised electricity	Transport	Low carbon cements and concretes	Fuel switching	Carbon capture, usage and storage (CCUS)	Carbonation	Thermal mass
Saving 27.05 $kgCO_2/t$	Saving 44.45 $kgCO_2/t$	Saving 76.28 $kgCO_2/t$	Saving 99.45 $kgCO_2/t$	Saving 390.97 $kgCO_2/t$		
-4% CO_2/reduction	-7% CO_2/reduction	-12% CO_2/reduction	-16% CO_2/reduction	-61% CO_2/reduction	-12% Further CO_2/reduction	-44% Further CO_2/reduction

increased efforts to promote their sustainability benefits. We are also producing guidance on how to design out carbon and design in material efficiency, resilience, wellbeing and biodiversity. We are working with CONSTRUCT and the wider construction sector to embed more sustainable behaviours and enable the technologies to be deployed that can achieve beyond net zero for concrete, buildings and infrastructure, and deliver the climate mitigation and adaptation needed to protect UK society. The roadmap is part of a clear pathway to achieve these goals.

The UK has the potential to be self-sufficient in the manufacture of concrete and cement, with all of the key raw geological materials abundantly available. Over 95% of UK concrete is already produced in the UK. However, effective regional and national public policy will be needed to maximise the economic value of these UK resources and retain national control over the emissions our society creates. The roadmap sets out a credible pathway to delivering net zero concrete and cement by 2050, along with our recommendations about the framework, policy and cross-industry collaboration that are required.

UK cement manufacturers have already invested hundreds of millions of pounds in decarbonising by:

- adopting the latest available technology;
- developing lower carbon cements and concretes, for example, by replacing clinker with lower carbon cementitious materials;
- switching from traditional fossil fuels such as coal and petcoke to the use of waste, waste biomass and waste part biomass fuels. These alternative fuels now account for 43 per cent of the fuel used, replacing the equivalent of half a million tonnes of coal every year.

To get to net zero and beyond, we understand that significant technological, structural and behavioural changes are required by our industry, clients and specifiers of construction materials across buildings and infrastructure. We are currently producing the information and advice needed for the transition.

The Seven Levers For Change

We've identified that net zero can be met through a blend of these levers, which include decarbonised electricity and transport networks, fuel switching, greater use of low-carbon cements and concretes, as well as advanced carbon capture technology.

Many of these levers are already proven technologies, while others will require collaboration and input from more than one industry. Most will need to be supported by local and central government over the long term, and, critically, all will require concerted action and investment.

At this stage, the roadmap represents our best course for achieving and going beyond net zero. However, as we approach 2050 it may prove to be the case that we can dial up or down certain levers depending on our progress.

The first five of these technology levers focus on production related emissions:

- **Indirect emissions reduction from decarbonised electricity:** a decarbonised electricity grid can facilitate the adoption of new technologies that require electrical power, such as carbon capture and electrical heat – including from plasma energy. Artificial intelligence (AI) and automation, will also deliver further operational efficiencies in concrete and cement plants.
- **Decarbonised transport networks:** the industry has, where possible, already increased its use of rail freight, a much greener mode of transport than road. By moving away from petrol and diesel vehicles, investing in new fleet, and reducing road transport miles, carbon emissions can be removed from delivery transport.
- **Low carbon cements and concretes:** concrete mixes with innovative low-emission constituents will be enabled by revisions to product and building standards, which in turn will encourage wider adoption of their use across the built environment. Additional R&D into alternative cement formulations and binders will further reduce emissions.
- **Fuel switching:** continuing to replace fossil fuels with alternatives will deliver significant savings – for example, our roadmap estimates that where available biomass wastes can generate over 70% of the heat used for cement production. Research, investment and supportive infrastructure will enable the use of hydrogen, plasma or other new heating technologies.
- **Carbon capture, usage and storage (CCUS):** this technology, which allows CO_2 emissions to be captured and either locked up in long-term storage or used in other industrial processes, represents the most significant technological shift in the roadmap, with the potential to make the greatest CO_2 reduction in the roadmap.

Going beyond net zero will be achieved by using on-site carbon capture and by maximising the natural, in-use properties of concrete which include:

- **Carbonation:** the natural process where concrete absorbs CO2 from the atmosphere throughout its lifetime and at end of life, storing it permanently as a carbon sink.
- **Thermal mass:** the property of heavyweight materials such as concrete and masonry where heat can be absorbed, stored and released slowly. Buildings with high thermal mass generally have lower energy requirements for heating and cooling and active thermal mass management can help to lessen the demand on energy grids.

With the route now plotted using our seven levers for change, we know where we're going and know there's no going back. We stand ready to supply and mobilise the technology, tools and materials needed for the transition to net zero and beyond.

For more information visit
thisisconcrete.co.uk/roadmap

Stressing the Importance

Post tensioning can lead the way in the building industry in the UK – and the PTA is here to help

The Post-Tensioning Association (PTA) has five core objectives:

- To promote the use of post-tensioning in buildings, bridges, silos and tanks, ground floor slabs and other structural types throughout the UK construction industry
- To promote best practice in the design, procurement and execution of post-tensioned structures
- To support and take part in research and development to improve the efficiency and technical capabilities of post-tensioning
- To support high quality in Post-Tensioning (PT) construction through the CARES Quality Assurance scheme and other relevant bodies
- To support safe working practices throughout the UK PT industry and to maintain high levels of training.

Membership of the Post-Tensioning Association is open to companies directly engaged in the manufacturing and/or installing of post tensioning materials and/or the design of post-tensioned structures in the UK, and that share our beliefs.

The Post-Tensioning Association has two membership grades; Full Member and Associate Member.

Full Members are companies that are involved in installing or designing PT structures or who are key suppliers to the PT industry. They are fully compliant with the PTA's strict membership requirements including quality, health & safety, training and participation criteria.

Associate Members will have an interest in PT while not being able to fully comply with the Full Member requirements.

Stressing The Importance

Our 'Stressing the Importance' charter has been designed and implemented by our members to support the Post-Tensioning Association in achieving its core objectives of promoting best practice in post tensioning.

The Post-Tensioning Association believes that by developing post tensioning to meet the increasing demands of the modern construction environment, it will enable post tensioning to take full advantage of all its opportunities and realise its full value potential for all stakeholders.

The Charter's Core Values:

Stressing the importance of safety through behaviour

We are committed to continually developing safety standards on site and to work towards the industry wide target of zero harm. Our members are involved in the development and implementation of initiatives designed to directly target improvements in reporting and resolving all safety concerns on site and in offices.

Stressing the importance of safety through competence

Post tensioning requires skilled, experienced labour both on site and in design. We recognise the importance of not only cementing current standards but working to improve standards going forward. We are committed to ensuring that best practice is standardised throughout all post-tensioned contracts not only for today's projects but also in preparing the industry's next generation of leaders.

Stressing the importance of safety through design

The design of post-tensioned structures is skilled and complex. We are working to improve the knowledge and awareness of the design requirements for post-tensioned structures, not only | to ensure consistency and conformity but also to ensure that the full design benefits of post tensioning are well known.

Stressing the importance of sustainable construction techniques

We acknowledge that the targets set out in the government's construction industry strategy for 2025 will be challenging. However, we also recognise that is it our responsibility to ensure that post tensioning evolves and grows both through targeted strategies and natural processes to meet these demands. Post tensioning has significant advantages over other techniques in terms of lower cost, fewer materials, less CO_2 emissions and faster installations, and is investing significantly in enhancing these benefits further.

The PTA Model Specification

In 2017 the Post-Tensioning Association released its model specification for the design and performance of post-tensioned concrete floors in building structures. This comprehensive document was compiled by 10 industry experts and was published by MPA The Concrete Centre. It can be downloaded from the Post-Tensioning Association The Concrete Centre websites.

Along with the model specification, a number of other technical guidance resources are available including:

- Sustainable construction with post-tensioned slabs
- Procurement of post-tensioned slabs
- Concrete stress limits for post-tensioned slab design
- Post-formed holes through post-tensioned slabs.

Active Industry Participation

The Post-Tensioning Association encourages its members to participate actively to relevant national and international technical working groups and committees. We are a member of the CARES Policy Advisory Committee and promote the CARES certification scheme for the supply and installation of post-tensioning systems.

The PTA Awards

Every year the Post-Tensioning Association delivers a Best Project award to recognise outstanding applications in the field of post tensioning within the UK. Entries are judged by a panel made up of leading industry experts.

In 2019 the award went to Praeter Engineering for the Newfoundland project.

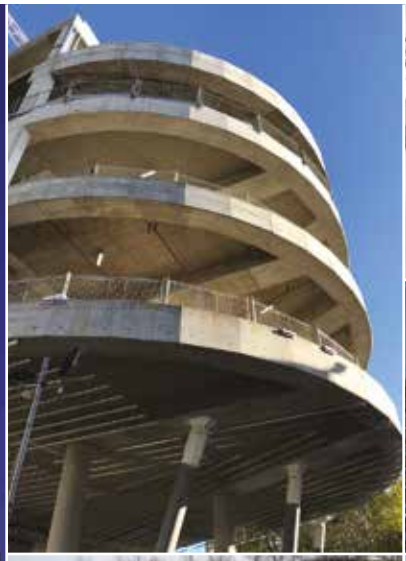
In 2020 we unfortunately had to give this event a miss due to the COVID-19 pandemic.

In 2021 we are delighted to team up with CONSTRUCT, and the award will be presented on Friday 1 October at the CONSTRUCT Day.

For more information, contact us:
info@posttensioning.co.uk
or visit our website;
posttensioning.co.uk

PTA
POST-TENSIONING ASSOCIATION

PROMOTING PERFECT POST-TENSIONING

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- To support safe working practices throughout the UK PT industry and to maintain high levels of training

BENEFITS OF POST-TENSIONING

- Greater useable floor area
- Extra floors
- Easier planning and layout flexibility
- Smaller carbon footprint
- Reduced costs
- Future proofing for change of use
- Quicker return on capital investment

e: info@posttensioning.co.uk | **w:** www.posttensioning.co.uk

The Perfect Storm: The Labour and Materials Crises - How Do We Solve Them?

Concrete contractors are facing up to the new post-pandemic crises: shortages in labour and materials

In a recent survey taken by our members, all of those that responded were facing a labour shortage of some kind, and over half stated that the shortage was acute. In addition to the direct inability to find staff for the roles available, the workforce pool was also demanding higher wage rates, with an average increase of 18-20%, but with extremes of 35%.

The labour shortages are not confined to the skilled labour either – general labourers were also in short supply. If we look further up the supply chain, we can see that labour shortages are having an effect there too. The haulage sector – bringing the materials we need to our sites – is also struggling to recruit, which has been causing delivery delays.

Looking at materials, we can also see cost inflation and a general lack of supply. According to the Construction Leadership Council (CLC), demand of construction materials in the first half of the year is up 55%, compared with the same period in 2019. A staple like timber is seeing price increases of 80-100%. Cement is at 50% of normal availability and there continues to be issues with steel availability (statistics reported in July 2021).

The Material Squeeze

These disruptions to supply chains are not sustainable, and they demand a change in approach. While the acute squeeze on materials is not expected to last more than another six months, the sector needs to readjust the 'Just in Time' (JIT) approach, as this will not always be possible.

Construction has made great strides to make its processes and supply chains 'lean' over the last decade. The JIT approach is still valid, but planning builds in time for material supply will be crucial. The industry will need to look to innovative technology in response, as well as competent management.

The CLC is working to make the process more transparent. We can expect to see allocations of materials from suppliers – this must be crystal clear and not favour the very large customers, but instead a fair distribution of available supply across businesses large and small.

Brexit has added additional red tape for imports (and exports), and the industry has to adapt to a 'new normal' with added paperwork and longer lead times.

Suppliers of materials need to set expectations, contractors need to plan their material needs further in advance, and clients also need to take a more flexible approach to contract terms, pricing and schedules.

The Daunting Task Of Achieving A Plentiful Workforce

Tackling the labour shortage is a steep mountain to climb, with the crisis both short- and long-term in nature. The pool of labour has significantly reduced with Brexit, and construction cannot rely on highly trained and cheap labour from the rest of the world. Wage inflation may recede slightly, but as the sector is competing with every other part of the UK economy for staff, we should expect wages to rise at a higher rate than pre-Brexit and coronavirus.

CONSTRUCT has lobbied heavily on the labour issues, including asking government to rethink its income support schemes.

With a vast proportion of the concrete structures industry workforce self-employed, there were – astonishingly – still construction workers claiming through the Self-Employed Income Support Scheme, despite the increased construction output and labour shortages.

Although evidence is anecdotal, we know a number have returned to their home countries in the EU and elsewhere, and are still claiming the support. It won't be clear until the scheme ends if they will return to the UK to work.

The EU Settlement Scheme reached its deadline on 30 June 2021, so many will not be able to return if they have not applied for settled status in the UK. With a weaker Pound and more barriers to live and work in the UK post-Brexit – even under the EU Settlement Scheme – the lure of UK construction work is, perhaps, not what it was for the skilled construction workers of the EU.

> **"As the sector is competing with every other part of the UK economy for staff, we should expect wages to rise at a higher rate than pre-Brexit"**

The new visa system is also a barrier to the concrete structures sector. CONSTRUCT members are reporting the bulk of shortages in occupations qualified to NVQ Level 2 or below. The government's threshold is Level 3 and above and must be on the skills shortage list. Add to this the cost of sponsoring workers at these levels, resulting in additional significant costs to each hire. The system needs to be fit-for-purpose for UK businesses' skills needs and with as little red tape and cost as possible.

The reality is, the industry is going to have to meet the government halfway – this means lobbying for short-term flexibility in the immigration system while the sector trains domestic talent. It needs the industry to invest heavily in training the next generation of domestic talent like never before.

CONSTRUCT knows its members' issues are not unique. We are therefore working collaboratively with the rest of the construction industry, and we must work with other sectors of the economy who share common problems that could be resolved by changing government policy.

Through CONSTRUCT's membership of Build UK, participation in CLC meetings, and through the British and Irish Trading alliance (BITA), the industry is beginning to rally around a united message, and a united plan.

Solving the Labour Issues

The CLC has released the Industry Skills Plan that sets out how the industry can improve the

skills system, which focuses on:

- Improving access to opportunities for all and attractiveness of careers
- Boosting all routes into industry, including enhanced work experience provision for those in full-time Further and Higher Education
- Shifting to focus on competence – from first qualification, to ongoing continuing professional development (CPD), and revalidation of competence
- Providing skills for a modern construction industry.

The CLC itself is a collaboration of industry with government; CONSTRUCT regularly voices its members' issues to the Construction Minister, and works with Anne-Marie Trevelyan MP, the department, and representatives from across the construction supply chain, to improve conditions for the industry.

CONSTRUCT has recently begun engaging with BITA, and participated in a roundtable session of industry leaders to look at how to tackle the labour issues.

CONSTRUCT is feeding in its members' ideas and concerns to these bodies and directly to government, and is calling for a flexible and fit-for-purpose immigration system for the long term that allows the sector to bring in the staff it needs without significant barriers.

Industry also needs a short-term solution to help bring in labour temporarily to deal with the current shortages. CONSTRUCT has called for:

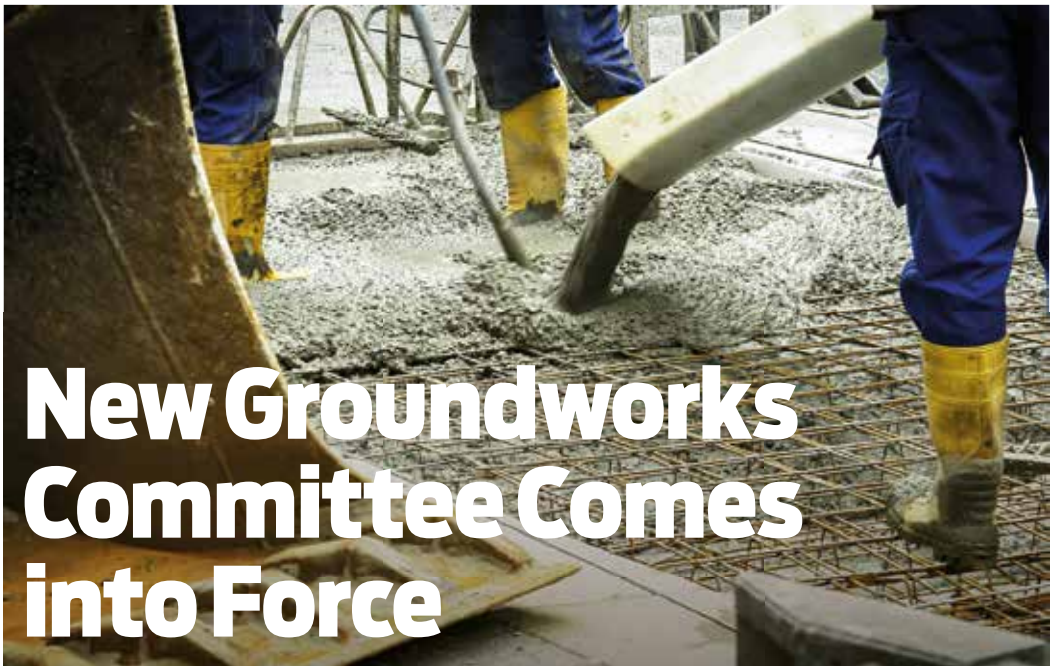
- A temporary visa route similar to those of the agriculture/fruit picking industry to bring in skilled workers
- Reducing the skilled worker requirement from Level 3 to Level 2

In the longer term, CONSTRUCT will be working to make the skills system in the UK easier to access, so that we have a new pool of qualified domestic labour. This includes:

- Enabling member companies to promote opportunities in the sector with our career teaching resources for schools
- Encouraging members to become STEM Ambassadors (previously Construction Ambassadors)
- Encouraging members to use the Talent Retention Scheme (TRS) and 'Talentview' to promote their training, work experience and job opportunities through these central hubs for experiences and new entrant labour respectively
- Collaborating with Further Education Colleges and Training Providers for work experience and bootcamp programmes to encourage more to 'try out' a career in concrete structures
- Exploring the idea of a longer-term visa system that commits an employer to train a new domestic worker in exchange for a qualified foreign worker
- Continuing to work with members to ensure the qualifications for our sector are fit-for-purpose – delivering competence and modern concrete structure industry skills
- Developing additional training courses to help up-skill and provide specific competencies for the sector.

All of CONSTRUCT's work fits with the wider industry plan and narrative to ensure the whole industry moves to a future where we have sufficient and competent labour.

It may be a daunting task ahead, but working together and tackling these issues head on will be the only thing that ensures the construction industry continues to prosper and contributes to the rebuilding of the UK economy after a turbulent couple of years. It's all achievable with will and determination, traits that the industry has continued to demonstrate through this challenging time.



New Groundworks Committee Comes into Force

Steve Hammond
Groundworks Committee Chairman

> **The new group has come together to make sure all voices are heard and to eliminate accidents and injuries on our construction sites**

Each year the Secretariat goes through a planning round for the following year's strategy so that as a trade association we can continue to meet the agreed terms of reference and also bring new ideas to the table for discussion. The CONSTRUCT Concrete Structures Group title pretty much defines what is represented operationally; however, the precursor to getting out of the ground and building the frames includes substantial groundworks and it was found this discipline would benefit by having representation through CONSTRUCT.

It gives me great pleasure to be elected as the Chairman of the Groundworks Committee, as I have deep seated roots in civil engineering works. I hope to be a great fit for the role and help shape where we can go from this starting point to being an enthusiastic and cooperative group that can achieve tangible results. I occupied the position of the Concrete Frame Training Forum (CFTF) Chairman's role for a four-year term; the committee was very active with reviewing training competencies through formative training so that it could be understood if the syllabuses actually reflected what is required at the coal face. Having direct access to proactive people within CONSTRUCT membership allowed us to better inform the training bodies such as CITB.

At present, we have held two meetings that allowed for initial scoping of the terms of reference and a discussion producing an outline strategy, and the second meeting allowed for further discussion around this in addition to sharing issues around training, quality, environmental topics and health & safety.

So why is there a need for this committee when the likes of Civil Engineering Contractors Association (CECA) offer access to a Health, Safety and Wellbeing Group via their membership? Well, we believe that voices can be lost when shouting in large organisations and as CONSTRUCT and its members have achieved some great success with collaborative work in the concrete frame space, there is no reason why this cannot be carried forward into the groundworks field of operations. We have already identified where safety differences can be made with familiarisation training on new variants of machines delivered to site and how that can be organised and help reduce incident numbers. We also discussed the merits of using cab mounted dumpers among other topics such as the designer and contractor relationships where temporary works are concerned. In fact, we have formed a subgroup to try and shape a working collaboratively good practice document.

Our number one priority must be to eliminate accidents and injuries on our construction sites where all trades are concerned, but this group will focus on the groundwork elements, which will be driven by the contractor and supplier members, as well as also being part of external working groups too such as the Construction Products Association (CPA).

One of the key benefits of attending the H&S meetings with the framing works is the access to sharing best practice; these meetings have given members a platform to showcase great ideas and as there is no monopoly on H&S we have all benefited from this; something else that will be echoed by this group.

The group is open to all of our members and to date we have representation from Tamdown Group, CJ O'Shea, Mabey Hire, RMD Kwikform, A J Morrisroe & Sons, Careys, Realtime Civil Engineering, Anderson Group, GCL, Byrne Bros, John F Hunt, Expanded, MPB Structures, Stephenson Group and Keltbray. All of these companies have shown a vested interest in supporting this group and are all willing to share good practices.

Projects in the pipeline:

- Temporary Works, building the correct relationships in order to understand roles, responsibilities and where overlap may cause confusion
- Procedure for preparing, picking and placement of double stacked trench boxes
- Lifting with excavators.

I look forward to embarking on this journey as Chairman of the Groundworks Committee, and to see the good that this group could contribute to the concrete structures industry. We welcome new members to join the group, so please get in contact with CONSTRUCT. The committee will provide information and guidance across the whole of CONSTRUCT membership, and I look forward to leading the Groundworks Committee on the great work we will be carrying out in the coming months.

War Memorial Creation Calls for Frami Formwork Panel System

Member: Mabey Hire
Client: International Bomber Command Centre
Project: Memorial Spire and Walls of Remembrance

Overview

Creation of a Memorial Spire and Walls of Remembrance to commemorate those who served in Bomber Command during WWII. Our Frami Panel System was used to create the concrete base to support the 102ft memorial spire.

The International Bomber Command Centre (IBCC) in Lincoln is a world-class facility to serve as a point for recognition, remembrance and reconciliation for Bomber Command. The Memorial Spire and Walls of Remembrance is a memorial for the thousands of crewmen who served in Bomber Command during WWII.

The Memorial Spire was designed by Stephen Palmer of Place Architects and is now the UK's tallest war memorial. The Walls of Remembrance record the names of the 55,573 men who lost their lives serving in Bomber Command.

The Challenge

The Memorial Spire is 102ft (31.09m) tall – the wingspan of the Avro Lancaster and the width at the base is 16ft (5m), and the overall width of a Lancaster wing. The main challenge was the accurate placing and support of the bolt sets for fixing the Spire. Had this been incorrect, the Spire would not have been able to be attached to the base.

Our Solution

The 31m high weathering steel spire, located on a hilltop overlooking Lincoln, is secured to the ground by a concrete base and can be seen for miles around. We were asked to supply a solution to create the base of the memorial. Lindum used our Frami panel system to form an 8.25m sq, 1.3m high 'mould' in which to pour the concrete for the base. The Spire represents the first phase of the construction of the International Bomber Command Centre – a lasting legacy to the 1 million people who served or supported bomber command in WWII. We worked very closely with Lindum in order to meet all of the client's criteria. Together we ensured that the most cost-effective, practical and safe design was supplied.

Customer Testimonial

"The accurate positioning of the holding down bolt assembly was crucial to this project. This was the reason Lindum chose to use robust and stable equipment supplied by Mabey Hire, who also provided vital support for the temporary works design."

TITAN Lends Support to Four-Storey Basement Site

Member: Ischebeck TITAN
Client: McGee
Project: Bankside
Location: Southwark, London

Project Background

Located along the South Bank of the Thames opposite the familiar One Blackfriars building, this scheme aims to deliver a four-storey basement, spanning the entirety of the site's footprint. The site will eventually see eight new buildings, topping 50 storeys for residential and commercial use.

With demolition of existing structures needed, Ischebeck TITAN was on site from the early stages of this project. The TITAN Support system was used to support existing slabs as upper floors were removed during this phase. An ongoing project, TITAN A-Frames were then used as the single sided wall solution to start construction of the basement walls, which is being delivered in two ways: one half of the basement is top-down, and the other half a more traditional bottom-up construction.

Project Challenges

Casting of lining walls was achieved using TITAN A-Frames and traditional aluminium beam shutters, but due to the nature of top-down construction, access was extremely limited and pre-assembled units could not be craned in and moved into position. Specialist engineering contractor, McGee, asked Ischebeck TITAN for a solution, and the TITAN A-Frame Wheel was quickly developed by our Engineering and R&D departments. Not a typical solution for A-Frames, the wheels enabled free and easy movement of the units across this area of the basement, offering the ideal solution for this part of the project. Ischebeck TITAN is known for skill and agility in working around problems that occur during the life of a project; with dedicated site technicians, sales engineers, design and delivery support, we provide a complete service for all temporary works needs.

Selman Jerlija, Operations Manager at McGee commented: "I was impressed by Ischebeck TITAN's support, and the wheel solution they came up with worked well on this project. Ischebeck TITAN are a good team to work with and I look forward to working with them again on this project."

Product Details

- Bespoke designs with full design and technical back-up;
- Compatible with Titan EPS and other edge protection systems;
- Standard pour heights up to 7m; greater heights up to 10m on request;
- High pressures achievable with realistic pour rates;
- Hire or sale options;
- Built in access at the top of the frame;
- Pre-assembly if required;
- Ideal for basements pours to RC Frames;
- LOLER certified for lifting.

NEW FROM ISCHEBECK TITAN - THE HD FAB.

Ischebeck TITAN Heavy Duty Folding Access Bracket (HD FAB) is a simple, easy to erect, use and dismantle climbing formwork / access platform that is a direct relation of the popular FAB access platform. TITAN HD FAB provides a shutter roll back system that can accommodate various shutter solutions from traditional soldiers and aluminium shutters to proprietary panel systems.

Lightweight and easy to install, TITAN HD FAB can be delivered pre-assembled and flat packed to site. With a 2.3m wide working deck and full height edge protection, HD FAB is engineered to give total confidence in safety and security.

BENEFITS

- 2.3m wide working deck
- Units up to 7.2m wide feasible
- Accommodates shutter heights up to 3.975m high
- Trailing platforms can be added beneath the HD FAB
- Units are fixed to wall on previously mounted wall brackets
- Up to 3 units can be transported on a standard flat bed trailer
- Full height protection on the main deck
- 654mm to 720mm access to the inside of shutter

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FreeFalcon Takes Flight with Fall Protection Anchor Kit

Member: FreeFalcon UK & Ireland
Client: Various
Project: Various

While constructing new factories for several Blue-Chip clients, we struggled to meet testing productivity KPIs, while not allowing safety to be compromised. Several options were tried without any great success, forcing us to the drawing board to develop our own solution – and the FreeFalcon Overhead Fall Protection Anchor was born. It was designed with safety as the leading principle but with ease of use and mobility as high priorities. We discovered that the innovative design of the FreeFalcon not only allowed us to achieve our safety and productivity targets, but to surpass them. On this basis we took the decision to make the FreeFalcon commercially available and FreeFalcon UK and Ireland Ltd was launched in 2018.

The FreeFalcon has since been independently tested, approved and certified for use in Europe, as well as Australia, Canada, New Zealand and the USA, where it is distributed as a Falpro.

The innovative design means that, even though the device only weighs 450kg, it does not need to be physically attached to the deck. When being used on formwork boards it is simply lifted onto the deck by crane, using the four Lifting points. Once there, it is easily moved by a single worker using a standard pallet truck and simply placed where it is needed. It can also be used when working on Steel Pan Decking using the same principles; however we can supply a pallet truck specifically designed to work on these surfaces to be used rather than the standard pallet truck. A third

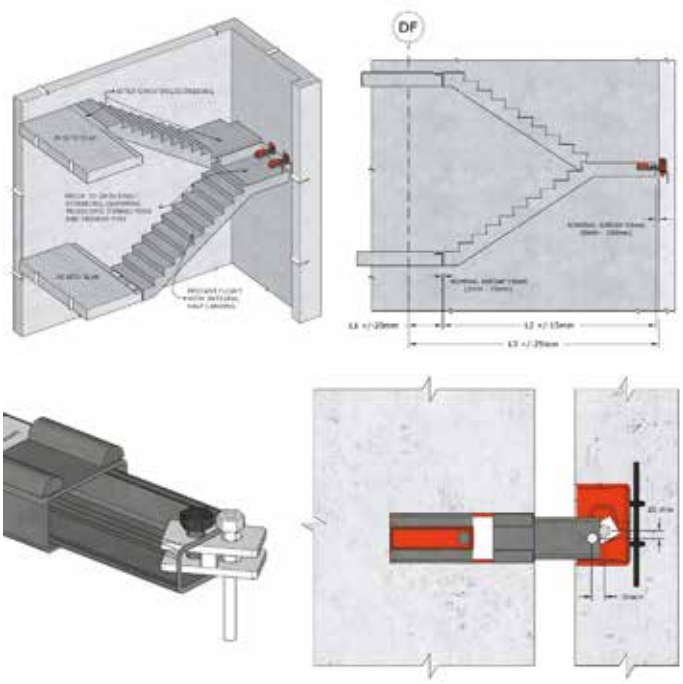
option is also available, as we can supply an Adaptor Plate which allows the FreeFalcon to be used on Prestressed Concrete Slabs – though this surface requires that the FreeFalcon is moved by crane.

At FreeFalcon UK and Ireland Ltd we very much believe in the ethos of supporting the client post-sale. We offer Operator Training and do everything possible to ensure that training and certification are afforded to every worker who will be using the FreeFalcon. We also offer Trainer Training which, when successfully completed, allows us to certify the clients' own staff to carry out their Operator Training. This is of course particularly beneficial where there is a turnover in staff. Both certifications last for a period of four years and refresher training is always available. We are also happy to offer advice on issues such as freefall calculations or how to minimise the risk from swingfall. While we prefer to carry out training on site, we have additionally structured a training programme that can be delivered "virtually" if circumstances dictate that site visits are not possible.

Many construction companies are already using the FreeFalcon, for example it was used extensively on major projects in London such as the Battersea Power Station Redevelopment and Chelsea Barracks. We believe the safety, simplicity, ease of use, mobility and increased productivity makes FreeFalcon the logical and cost-effective option when it comes to fall protection. Additionally, we are very proud of the statistic that, using our equipment and rescue plan, a fallen worker can be rescued in less than two minutes. Our units are already saving the lives of construction workers across Europe and the USA with expansion into Australia and New Zealand moving ahead rapidly.

All of us here at FreeFalcon UK & Ireland Ltd would like to take this opportunity to say a very sincere thank you to all who have supported us on our journey thus far and we look forward to building many new professional relationships within the construction industry in the future.

Super-Size Staircase Project Shows Benefits of Collaboration



Member: Invisible Connections
Client: Expanded Ltd
Project: Invisible Connections at South Quay Plaza

The Project

Designed by world leading architects, Foster + Partners, South Quay Plaza plays a pivotal role in revitalising the historic Docklands around Canary Wharf. This sustainable, mixed-use scheme consists of two buildings: a 68-storey residential tower addressing Canary Wharf and a smaller development relating to the streetscape of Marsh Wall, with landscaping and a major new public plaza.

The towers include new ground floor retail areas as well as a wide range of residential amenities, such as a double height pool, fitness centre and spa, community and children's spaces. A residents' lounge and garden on the 56th floor features the highest bar in London, offering unique views of Docklands and the city beyond.

Telescopic Connectors Provide Answer To Construction Tolerances

When different methods of installing the precast stair elements were under consideration, the frame contractor, Expanded Ltd, engaged Invisible Connections. Initially, the methods centred around the traditional use of rolled steel angle supports, fixed back to core walls using post-drilled fixings or cast-in channels and T-bolts.

With the main tower being so tall (220m) the Expanded Ltd project team expressed concerns regarding the large nominal airgap (50mm) between the precast landings and RC walls, and the potential for this to negatively combine with dimensional tolerances of other RC elements as construction progressed, leading to a potential worst-case airgap of 100mm. Such potential variability would obviously influence any connection method chosen for the precast stair elements.

RSAs were soon rejected in favour of telescopic connectors; stair landing connectors are much more accommodating of required tolerances as well as being easier, faster and safer to install. Choosing telescopic connectors also prevented the many risks (power tools/dust/noise/HAVS) associated with drilling a total of 680 holes in the core walls.

Partly because of the large risers in corners of the stair core, it was decided to design precast flights with integral half-landings. This decision also saved 68 crane lift operations (compared to designing independent flights). For practicality, half of a half-landing was precast with each flight (designed 'stiff' and requiring no support at the front of the landing).

Invisible Connections proposed a pair of RVK101-30 telescopic connectors to be cast into each half of the half-landings. This connector type enabled a pinned connection to be made into the walls (into REDiBOX purpose-designed recess formers) thus also satisfying UK anchorage requirements.

Innovation

This project presented the potential for significant dimensional variability, resulting in very large airgaps. To provide additional tolerance, Invisible Connections proposed longer inner sections for the telescopic connectors. It was impractical for the precaster to accommodate the longer inner sections in the moulds, so these were fitted at site and left projecting from landing ends.

As an additional safeguard, Invisible Connections developed a simple but versatile extension piece, which meant that any reasonable three-dimensional variance (vertical/horizontal/axial, if encountered) could be accommodated. In the event, the tolerance inherent in the hundreds of telescopic connectors supplied meant that only a handful of extension pieces were requested (and which, we understand, proved unnecessary).

Ongoing Supply And Bespoke Ferbox Continuity System

Since completion of the main tower, Expanded Ltd is using telescopic connectors throughout the remaining structures (currently in progress). In addition, there have been several large volume applications for Invisible Connections' FERBOX bespoke continuity system, which include special size casings to avoid clashes with formwork tie locations.

In summary, this super-size project demonstrates what can be achieved by early contractor and supplier engagement. Timely exchange of information and effective collaboration produced a practicable solution, delivered measurable benefits and ongoing programme efficiencies.

The Next Generation of Edge Protection Barriers

Member: VivaTec
Client: Various
Project: Various

Following several months of development, via in-house R&D, VivaTec has now launched its new hot dip galvanised barrier. This product is a significant evolution in the temporary edge protection barrier marketplace, seeing the first major development of the hugely popular 'bent mesh' type barriers since they were launched in the mid-1990s.

25 Years Of The Same Product

Since the first systemised edge protection solution was launched in the UK in the mid-1990s, the design, materials and finish of 'bent mesh' barriers have changed little. The standard finish is powder coated black steel. Not if, but when the paint is chipped off during handling and movement and exposing the black steel, corrosive rust will form. The erosion will look poor but most importantly the material will lose strength integrity.

It is an industry issue, with many firms grappling with the challenge, trying to create a solution for this gap in the market. As most companies are simply hire and sales agents, the investment in R&D with their third-party manufacturers has made it prohibitive. As VivaTec manufactures its own products at its factory in Germany, it was able to invest the time and money to create a solution that would differentiate it in the market.

Many companies had tried the hot dipped galvanised steel treatment on the bent mesh design before, but the toe board was too thin to withstand the procedure. After many years of requests for hot dip galvanised steel barriers, VivaTec dipped its toe in the challenge and was able to spend several months developing a solution, the first fundamental material change in bent mesh temporary edge protection barriers in a generation.

Significantly Longer Lasting – What You'd Expect From German Engineering

BMW, Mercedes, Audi... they all stand for one thing: 'quality engineering' – and that's VivaTec too. In short, the new hot dipped galvanised barriers will last significantly longer than the standard products because the fundamental issue of paint chipping has disappeared.

Also, the materials will remain intact with no loss of integrity, making the product safer.

No rust – which makes the side of buildings unsightly and affects the main or sub-contractors on-site branding – will appear.

The inevitable movement of the barriers either on-site or between sites will not lead to costly refurbishments or replacements, saving time and money.

Oliver Gwinnell, MD at VivaTec said, "One of the big beneficiaries will be fleet operators, as their products will last longer because they are less susceptible to corrosion. They can be rest assured that their hire fleet will have an increased life span and thus the opportunity for more profit."

Befitting Of A UK First

The first contractor to use the new products is RC frame contractor OBR Construction at CField Construction's award-winning Lion Green Road residential scheme in Croydon. Designed by Mary Duggan, the project's plans were exhibited by RIBA at the V&A Museum in London.

OBR's Construction Director, Mike O'Sullivan, said: "When VivaTec said they were able to offer the hot dipped galvanised technology we wanted it. Hot dip galvanising offers a greater level of corrosion protection, is self-maintaining and easier to clean. They will have a longer lifespan, which is also beneficial from a sustainability point of view."

Gwinnell said: "It's befitting that the first site using the new product is the Lion Green Road development, which is going to be a building style icon. However, these barriers will not only look good at Lion Green Road but also at the subsequent sites they are used on for years to come.

"Barrier corrosion has been a fundamental issue during the 20 years I have been in the temporary edge protection industry. I have worked for other suppliers and this had always been an issue for customers. When we launched VivaTec in the UK our goal was to solve many of the long-standing issues such as this.

"There are other hot dip galvanised barriers on the market but they tend to be 'framed mesh' design barriers and are much heavier. A big part of the popularity and success of the 'bent' mesh design is that it is robust yet lightweight; it was important that the barrier remained a one man lift within the manual handling regulations."

"We are new to the UK market and I'm delighted that in our first year of operation we can develop and bring products, such as this barrier, to market. Our point of difference is having our own factory. Not only can we stay in control of the process and produce quickly but also use our own in-house R&D team to constantly look at new ideas."

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MAX FRANK BUILDING COMMON GROUND

Member: MAX FRANK
Contractor: HG Construction
Architect: BuckleyGrayYeoman
Project: Dace Road development, London

Inspired by the use of thermal breaks on the urban Fish Island Village scheme, contractors of the mixed-use Dace Road development, HG Construction, recognised the versatility of MAX FRANK Egcobox thermal break connectors, while providing fire protection to REI 120, for this project and set about looking at how it could be utilised to provide a better end result for the client.

The impact of thermal bridging often results in heat loss, condensation and ultimately mould formation within the building. Thermal bridging can be combatted through using credible thermal break solutions.

The most common application for thermal breaks is to minimise thermal bridging between the slab and balcony. However, in this case, Egcobox thermal break units were also supplied to prevent thermal bridging between external insitu cladding panels and the internal concrete structure – designed for both horizontal and vertical cladding panels.

Project Specification And Requirements

Dace Road is a 6,500m2 mixed-use development that sits in a prominent location, at the entrance to Fish Island, in Stratford. Existing warehouse structures were demolished to make way for five blocks comprising 144 residential units and a commercial unit – all with new public spaces, complete with a commercial courtyard.

HG Construction worked closely with MAX FRANK to overcome initial construction challenges, and through a series of technical workshops, value engineered the product to work within the development's build.

Application: Balconies And Parapet Walls

Thermal breaks combine structural safety and ideal heat insulation. Egcobox units are usually installed as cantilever connectors in balconies and in parapet walls. The structural stability of Egcobox is provided by a framework of steel reinforcement passing through the 60 to 120mm thick mineral wool/rockwool insulation to guarantee fire protection to REI 120. Egcobox reliably connects components, such as balconies, to the building and encloses roof decks through the installation of parapet walls.

Application: Precast Stone Horizontal Banding

The precast stone banding allowed the project contractors to achieve good quality control on the finish of the banding. Project Architects, BuckleyGrayYeoman, stated, "BGY's façade designs at Fish Island, across two of the five new mixed-use urban blocks, uses a distinctive reconstituted stone horizontal banding, with an accentuated fluted detail at each balcony set within the main body of brickwork. We were interested in tonal consistency and a high-quality smooth factory finish at these horizontal elements."

The process also provided assurance when planning and programming, knowing that the banding was cast and ready for installation as the frame was erected during construction. As a structural element, the banding also acted as the masonry support for the façade at each storey level. This is where MAX FRANK Egcobox came in.

Bryan Haynes, Project Director said: "The thermal connectors were cast in to allow for the banding to act as a thermal and fire-break system. The planned buildings were over 18 metres tall and therefore subject to Regulation 7 guidelines. This specific application of Egcobox and its fire-compliance features played a key role in achieving building control sign-off on this method of construction from a fire-safety perspective."

Bespoke Egcobox units were designed and fitted within the insitu façade panels. The installation process involved casting the Egcobox unit into the floor slab, forming a thermal break between the cladding panels and the insitu concrete structure, and transferring the load while maintaining the building's full structural integrity.

BuckleyGrayYeoman, added, "Precast lends itself to casting-in masonry supports that are thermally broken, such as the MAX FRANK connector. In the horizontal plane at each slab interface, the thermal break is continuously formed, with no additional bracketry, which is often the cause of issues such as cold bridging and interrupted fire breaks. It also meant that the brickwork, which the banding supports, could be formed entirely without traditional masonry angles."

Choosing The Egcobox

The versatile Egcobox thermal break connection system provides fire protection to REI 120 and conforms to the amended Building Regulations 7(2) for combustible products for England. The thermal break units were designed by MAX FRANK's technical department and custom-manufactured for this specific project – and its varying applications. The Egcobox software allowed straightforward modelling of thermal break application.

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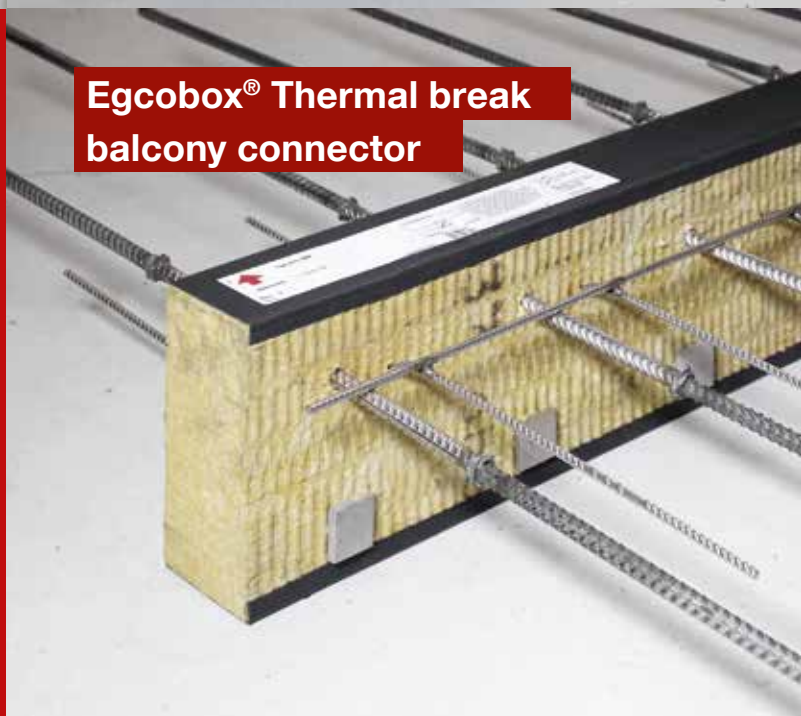

Egcobox® Thermal break balcony connector

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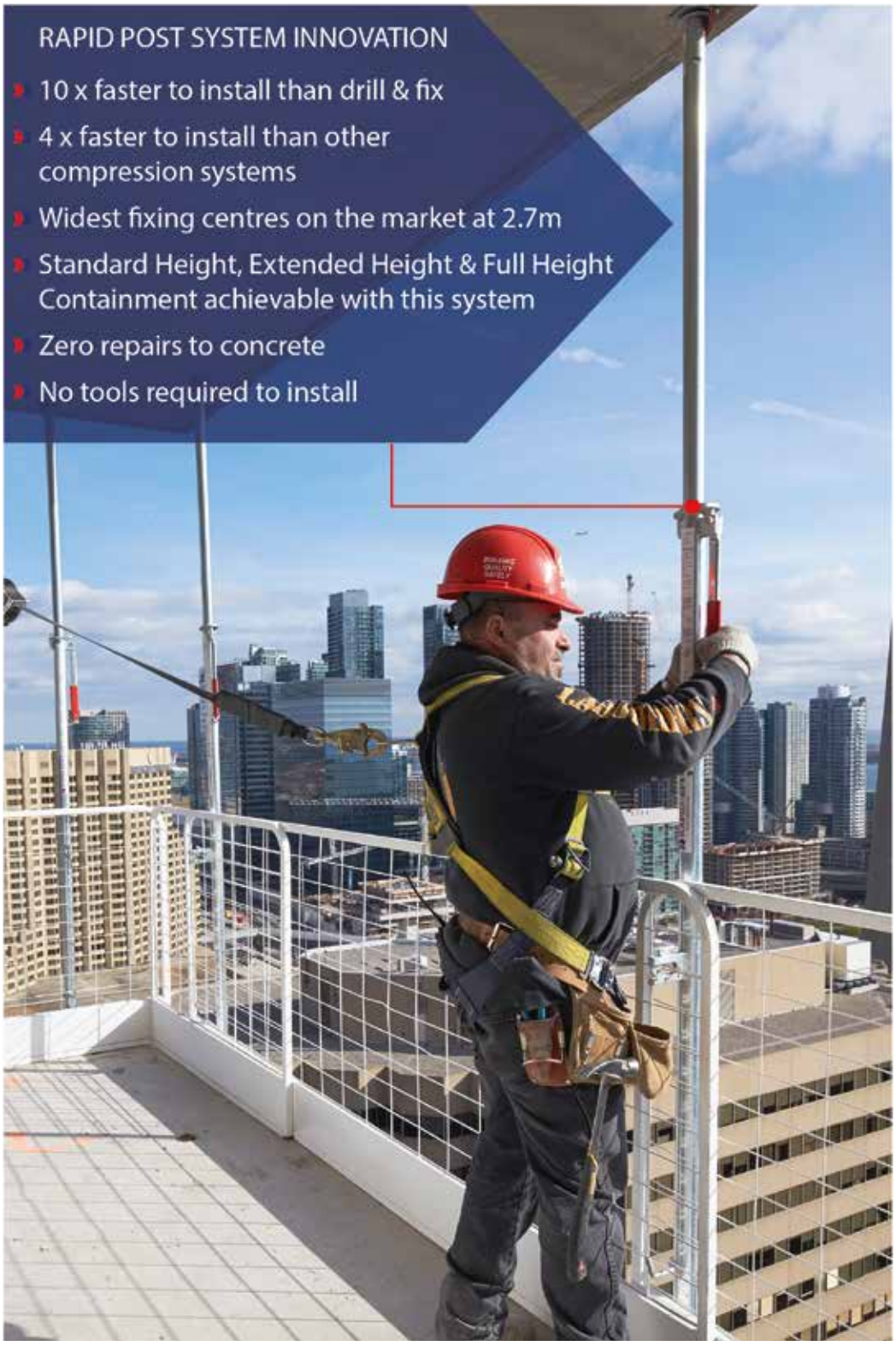

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