

## Exciting Times Ahead

Issue 23  
July 2023



Viking Windfarm, Shetland

Hello and welcome to another edition of the Centuryan. As you may know this magazine is now being edited by our Social Value and Sustainability Manager, Joe Came. A big thank you to Joe for putting this together. Please help him with articles whenever you can.

The world is becoming a very different place. Our impact on the environment, our need to create a safe and inclusive workplace and our relationship with communities not directly involved in our works is now just as important as how we go about our core activities. It is also how we are judged by our stakeholders and is crucial in our ability to secure future opportunities.

As we end our financial year and report on our progress, early signs suggest that the group will see record year end sales with strong business unit performance across our companies. During the year, our pursuit of future projects has been relentless resulting in a forward order book larger than ever before, and by some margin.

The marketplaces that we work in remain volatile. Increased energy costs remain significant as does the high rate of inflation. We are told that these will both begin to drop

but currently meaningful reductions seem to be illusive. The team in Centura recognise these global issues and are constantly adjusting tender prices, budgets and of course the financial commitments to our staff.

This year there have been some changes in group companies. Our activities in the Middle East have ceased. Buxton Associates is not accepting any new work. Instead, our structural engineering opportunities are being routed through FJ Samuely, the sister company. Our fire alarm and service company, TL Fire, has been acquired by Rob Foulsham and Ross Matthews who have worked to grow this business for many years. This is a big step for them, and we wish them all the best for their future.

Elsewhere, all Group companies remain extremely busy across the whole of the UK and in Australia. Our team in Melbourne continue to pursue growth with a good mix of repeat work from existing clients together with new opportunities around the State of Victoria.

We are happy to welcome Adam Dubiel as our new Regional Manager for CRL in Scotland but sad to say goodbye to Ben Lawson,

our Regional Manager for CRL in London. Ben is leaving us for pastures new after more than 24 years with CRL. I'm sure that you will all join me in wishing Ben all the very best for his future.

Recently we celebrated another 24-year milestone with the Order of Distinction from RoSPA for "Outstanding performance" in our management of health and safety in CRL.

The management of health and safety and the welfare of all our staff must remain our most important priority. A recent staff survey identified that improvements should be made in our recognition and management of mental health issues. Improvements have already started with updates to our Intranet help functions and we will be training more Mental Health First Aiders so that first line help is never far away.

The company retains a lot of expertise and advice for many health issues both internally and through external providers. Please remember that we care about all of you and will never hesitate to offer whatever support we can. If you have any problems, either work related or personal, please do not hesitate in seeking support.

We have achieved a great deal these past few months and the seeds of all that hard work are now beginning to grow. We move forward with an excellent order book and the strongest future position ever for the Group.

Please be proud of those achievements and we can all look forward to exciting times ahead.

Tony Rimoldi  
Chief Executive

**Samuely**  
Consulting Structural Engineers

**Lifespan Structures Ltd**

**CRL**  
SURVEYS LIMITED  
structural & building assessment

**TL Fire**  
FIRE SAFETY SERVICES

**equilux**

**buxton**  
ASSOCIATES

**CRL**  
CONCRETE REPAIRS LIMITED  
multi-disciplined structural renovation

# The numbers

A regular feature in this newsletter is to publish a scorecard showing how the group is performing. The following tables has gathered together all the latest information from the current financial year.



CENTURA GROUP

Jan - June 2023

## Customers & Markets

1339

No. of tenders submitted

£161m

Value of tenders submitted



695

No. of new contracts awarded

£62m

Value of contracts awarded



## Training, Quality & H&S

750,120

RIDDOR free hours \*(stats to May 2023)

98%

CSCS carded site workforce

## Financial & Stakeholders

Turnover year to June 2023



Profit year to June 2023



Overhead costs year to June



Cash Flow



## Group Business Plan Sales for Year to June 2024

	Target	Total
<b>Concrete Repairs Ltd</b>		
Bristol	£9.0m	
Chesterfield	£9.0m	
Highways	£19.4m	
Falkirk	£9.0m	
Mitcham	£8.0m	
Australia	£5.5m	£59.9m
<b>CRL Surveys Ltd</b>	£2.1m	£2.1m
<b>Standmark Ltd</b>	£0.2m	£0.2m
<b>FJ Samuely Ltd</b>	£0.7m	£0.7m
<b>Equilux Ltd</b>	£0.4m	£0.4m
<b>LifeSpan Ltd</b>	£0.5m	£0.5m
<b>Total Sales</b>		<b>£63.8m</b>

# Group gossip

## The Group would like to welcome...

Albert Hasa (CRL Mitcham)  
Alin-Catalin Gocea (CRL Mitcham)  
Bethany Wareham (CRL C'field)  
Bradley Bostock (CRL Chesterfield)  
Cameron Blair Quinn (CRL Falkirk)  
Carl Miller (CRL Chesterfield)  
Charles Stewart (CRL Highways)  
Colin Southey (Centura)  
Corran Campbell (CRL Falkirk)  
Cory Mason (CRL Bristol)  
Craig Flowers (CRL Chesterfield)  
Damien Munnely (CRL Falkirk)  
Dan Walsh (CRL Surveys)  
Daniel Gebreysedik (CRL Highways)  
Danielle Franklin (CRL Bristol)  
Dave Stewart (CRL Chesterfield)  
David Dickerson (CRL Chesterfield)  
Drini Hazizi (CRL Mitcham)  
Edward Clifford-Hill (CRL Bristol)  
Isaak Malone (CRL Australia)  
Jack Biggins (CRL Chesterfield)  
Jaden Miller (CRL Chesterfield)  
Jamie Bath (CRL Highways)  
Jane Ralph (CRL Highways)  
Jason Brown (CRL Bristol)  
Jevan Brown (CRL Highways)  
Joe Hardwick (CRL Highways)

John Winton (CRL Falkirk)  
Jonathan Miller (CRL Chesterfield)  
Julie Greenway (Centura)  
Karen Wilson (CRL Chesterfield)  
Karl Butler (CRL Chesterfield)  
Kavel Patel (Equilux)  
Kobe Smith (CRL Australia)  
Lavern David (CRL Australia)  
Leonard Mustre (CRL Surveys)  
Luke Akers (CRL Chesterfield)  
Luke Mobberley (CRL Chesterfield)  
Meena Hashemi (CRL Mitcham)  
Michael Gyarmati (CRL Australia)  
Mike Lloyd (CRL Highways)  
Monica Patel (Centura)  
Nathan Emery (CRL Bristol)  
Navdeep Singh (CRL Highways)  
Nige Emery (CRL Bristol)  
Radu Alexandrescu (CRL Mitcham)  
Rayyan Patel (CRL Mitcham)  
Razvan Pascu (CRL Highways)  
Romeo Hazizi (CRL Mitcham)  
Sarah Wardle (CRL Chesterfield)  
Shpetim Fetahu (CRL Mitcham)  
Simon Farman (CRL Falkirk)  
Toby Danielson (CRL Bristol)  
Waldo Zaragoza Osollo (Samuely)

## And say goodbye to...

Ben Lawson (CRL Mitcham)  
Charlie Nadin (CRL Chesterfield)  
Colin Smith (CRL Falkirk)  
Damien Nicola (CRL Australia)  
Dave Burgess (CRL Highways)  
David Clark (CRL Bristol)  
Grzegorz Pawlik (CRL Chesterfield)  
James Moogan (CRL Chesterfield)  
Jarryd Du Plessis (CRL Falkirk)  
Javed Sakhi (CRL Highways)  
Jeffery Thomas (CRL Bristol)  
Jonathan Clifton (CRL Mitcham)

Kobe Smith (CRL Australia)  
Lavdrim Ismailaj (CRL Mitcham)  
Lee Skipworth (CRL Mitcham)  
Mhairi Willey (CRL Chesterfield)  
Nigel Randall (Centura)  
Paul Curran (CRL Mitcham)  
Peter Houghton (CRL Chesterfield)  
Peter Penfold (CRL Mitcham)  
Raymond Henry (CRL Mitcham)  
Ricky Cotton (CRL Chesterfield)  
Stewart MacLennan (CRL Falkirk)  
Wai Kei (Wiky) Chu (Centura)

# Mental Health

4693  
(existing)

GARDEN

Please take time to familiarise yourself with the new Mental Health Awareness section on the Centura Homepage. You can find this in the top right corner.

Look out for red "Need Help?" icon -

This will take you to our Mental Health Support page which has many useful links to resources and charities.



## SUPPORT FOR CENTURA GROUP EMPLOYEES

Click the images below to open links



## HELPLINES & CHARITIES FOR EVERYONE

Click the images below to open links



# Mental Health

4693  
(existing)

GARDEN

## MENTAL HEALTH FIRST AIDERS



**Callum Cruse-Morrell**  
**07435 791 213**  
ccruse-morrell@crl.uk.com

**Daren King**  
**07801 756 729**  
dking@crl.uk.com

**Jose Castro**  
**07522 232 168**  
jcastro@crl.uk.com

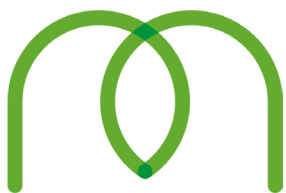
**Kevin Bullen**  
**07391 419 564**  
kbullen@crl.uk.com

**Mark Randle**  
**07771 372 991**  
mrandle@crl.uk.com

**Matthew Robinson**  
**07808 255 267**  
mrobinson@crl.uk.com

**Sandra May**  
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smay@crl.uk.com

**William Sinnott**  
**07824 542 239**  
wsinnott@crl.uk.com



**MHFA England**

**There are plenty of different types of support out there, and a mental Health First Aider can help access the support you need to feel better.**

Mental Health First Aiders are a point of contact if you, or someone you are concerned about, are experiencing a mental health issue or emotional distress. They are not therapists or psychiatrists, but they can give you initial support and signpost you to appropriate help if required.



## Plymouth Car Parks

CRL were first introduced to the Plymouth MSCP repair and refurbishment scheme in 2018, when at the time CRL were negotiating the repair and external façade redecoration at Plymouth City Council offices, Ballard House, which was completed in 2020.

Since then they have been aware of and have been closely following the anticipated works for these 5 Car Parks in Plymouth; Theatre Royal, Mayflower East, Napier Mutley Plain, Regent Street and Western Approach. In 2020 just when they thought they had negotiated the contract, Covid struck and everything was put on hold.

Finally in September 2022, Plymouth City Council Parking Services put out a tender for the works which comprised of extensive concrete repairs, waterproofing, joint replacement, and further inspection of some areas to the primary concrete structures to these 5 car parks. The aim of the works was to maintain the structural integrity and increase the lifespan of the car parks.

The works included;

- Traffic management to enable the different activities to be carried out,
- The replacement of horizontal & vertical movement/flexible joints,
- Concrete repairs to various parts of the structures,
- Preparation & application of an anti-carbonation coating,
- Concrete testing to assess chloride content & depth of carbonisation,
- Surface cleaning (pressure washing) of walls, columns, and slabs where required,
- Resurfacing to the top decks with Triflex Deckfloor & re-painting of surface markings,
- Replacement of top exposed deck joints with new waterproof Arfen mechanical joints,
- Removal of any fixings no longer required,
- Removal of efflorescence,
- Corroded metal plate repairs to Mutley Plain car park,
- Hammer tap surveys and opening up of the structure for further investigation.

CRL are being assisted by Stripe Consulting (specialist MSCP consultants) who are acting as our Principal Designer and are working closely with the Plymouth City Council Project Management team and JUBB Consulting (the PCC Technical Advisor).



## Refurbishing the Purton Clarifiers

Purton Treatment Works has twelve clarifiers which have been in continuous operation since 1973 when they were installed. Purton is a critical asset for the production of potable water, typically providing between 40-50% of the total supply across all Bristol Water sites, of which 72% is processed by the clarifiers.

Deterioration of both the mechanical and electrical equipment and structures had occurred to the extent that both were at serious risk of failure with some reduction in treatment capacity already evident. It was realised that an unexpected loss of a clarifier due to failure would impact the capacity of the site significantly, so a decision was made to carry out a programmed refurbishment of works to them.

CRL Bristol are currently undertaking the repairs and refurbishment to 8 of these clarifiers, the aim being to restore the clarifiers to a suitable condition to be able to continuously meet the maximum expected throughput of the treatment works of up to 120ml/day.

The works were broken down into 2 stages with the first stage tendered for in November 2021. Stage 1 of the project was to provide an ECI service to work in conjunction with Bristol Water to create a design which offered a realistic and tenable costed programme of works that demonstrated 'Value for Money', and to design engineering solutions to access the site with the limitations that are in place. Stage 2 was then to deliver the works to Costed Target Programme (NEC4 Engineering and Construction Contract (Option C) Target Cost) as agreed with Bristol Water. CRL were successful in securing the ECI works and then negotiating Stage 2 (The Works).

The works were originally split into three Phases:

- Phase 1 works to refurbish clarifiers 2, 4, 6 and 8. (carried out by a competitor!)
- Phase 2 works to refurbish clarifiers 1,3,5 and 7, and
- Phase 3 works to refurbish clarifiers 9, 10, 11 and 12.

And generally, the scope of work comprises the following:

- Replacement of the GRP launders with stainless steel launders,
- Replacement of the inlet pipework and associated valves,
- Replacement of the de-sludging buckets and level adjustment mechanisms,
- Replacement of the outlet pipework and valves,
- Inspection and repair of the launder support beams,
- Supply and installation of a suitable material for the concrete and steelwork renovation / remedial works,
- Inspection and repair of clarifier internal concrete surfaces,
- Temporary works to provide a dry and dehumidified environment for the application of a concrete coating system,
- Coating of vertical internal concrete surfaces with suitable approved coating system,
- Repair of crack and crevices in clarifier feed and exit channel upper walls, and
- Provision of metalwork access walkways and replacement of non-compliant handrailing, kickboards and mesh infill panels.

We have been on site now since January 2023 with an overall programme duration of 12 months. The awarded contract value was £2.7m (although this is expected to increase substantially due to additional works being added onto the packages).



## Swinton Flats

CRL have been working on the contract to repair the hollow core plank floor slab to 9 blocks of flats in Swinton, Rotherham. Due to the different nature of the works, multiple contractors refused to price the project. CRL priced and were awarded the job.

The works were based on a 42-week programme duration, which we are on track with and will likely do so whilst running a reduced team on site. The project itself has thrown numerous curve balls thrown at us that we have managed to overcome and provide suitable and efficient solutions to, these include;

1. Access
2. Confined Space
3. Asbestos
4. Forced Ventilation
5. Changes in Material

The works involve undertaking repairs to the hollow core floor planks which were in state of repair from water ingress and corrosion. Access to the works was the initial issue we were met with on site, due to the existing ground being removed and banked off to ensure the existing propping stayed in place.

After careful consideration CRL opted to use a proprietary access system supplied by Altrad that incorporates the use of trestles and 2.4m length youngerman style boards, this can then be handrailed off and worked from as per an alloy tower system. Our works involve removing all defective concrete and gaining access to the corroded steel, prepping the steel and coating with Sika repair products. The CRL site team then have to ensure the void is kept when reinstating with Sika repair material by fusing adhesive to fix Kingspan that's cut to dimensions on site, a 10g 1" square mesh is then tied to existing rebar to return some structural integrity to the plank and also act as a something for the repair material to adhere to.

The repair is built up in thicknesses as detailed on the product datasheets and finished off to a smooth finish. As we are not repairing all the planks, only those with defects highlighted on a previous inspection by CRL Surveys we then protect the rest of the area by using SikaGard FerroGard 903 and then coat with SikaGard 706 Thixo which is a water impregnation cream that protects the whole surface following the completion of our repairs.

Overall, there has been some difficult problems we have had to overcome on site but the whole team has managed to pull together and get the works back on track after falling behind earlier on in the project, this project has also been great in developing relationships between CRL, Equans and Rotherham Council that I am certain will lead to further works being offered to CRL.





## Viking Windfarm, Shetland - 80 Down 23 to Go

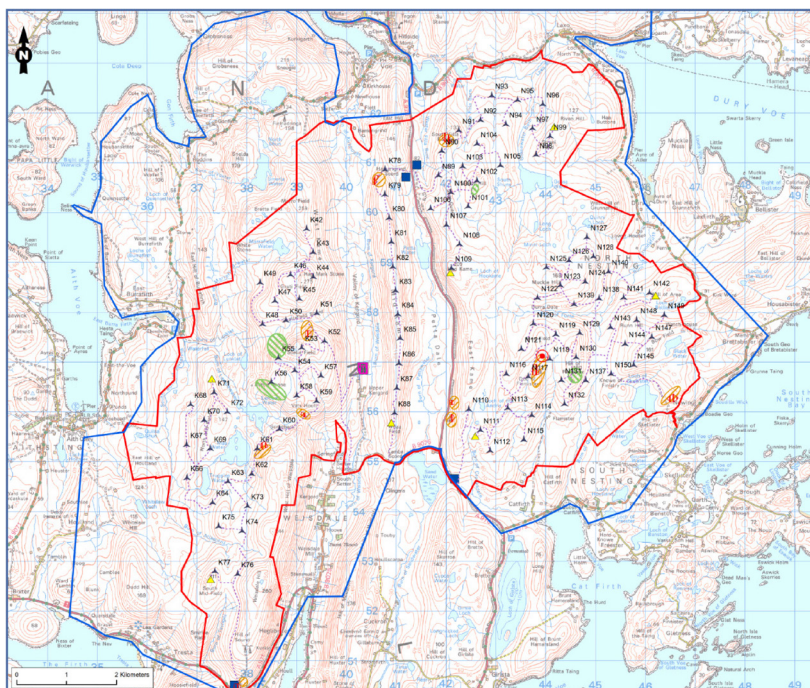
This year our one of our grouting teams are in Shetland working on Viking Windfarm grouting 103 Vestas turbines.

The team headed by Senior Supervisor Colin McMaster includes pump operator John McFarlane and Telehandler driver Graham Borland. The team have been in Shetland since March and have managed to complete 80 out of 103 turbines at the time of this publication and are working towards a completion of grouting works in early August.

This has been a very challenging project with the turbines covering a vast area of central Shetland and the travel distance between turbines has been up to 20 miles.

Working in Shetland always provides interesting challenges including an overnight ferry trip from Aberdeen to Lerwick. This ferry trip, even in summer, can test everyone's ability to keep their last meal in place as the North Sea can be punishingly rough and the end of the trip is always welcome.

Once the grouting is complete the team will start on the waterproofing of the turbines which involves adding a layer of Triflex Towersafe over the grout ring to prevent any moisture entering the turbine basement.



## Wing WTW Reservoir

Wing Water Treatment Works (WTW) is located east of Wing in Rutland and is situated on a SSSI site (Site of Special Scientific Interest). The WTW, operated by Anglian Water, treats water extracted from Rutland Water reservoir (the UK's largest man-made reservoir) a few miles to the north, for distribution to Peterborough and Corby.

Through our 'framework' with Anglian Water we were asked to price various works to the reservoir situated at the WTW. The reservoir has a capacity of 10,000m<sup>3</sup> and consists of two cells. Both cells were previously storage reservoirs, but one is now used as a contact tank. CRL carried out some work to the contact tank in 2021/2022 and are now working within the second cell reservoir.

As with a few dual cell assets, sometimes the 'live' cell cannot be fully isolated from the one taken out of service. Thus, there is water ingress from the live cell that can then prove quite challenging to manage or divert away from applied materials during application and curing. Furthermore, the live cell on this site is a contact tank which means higher chlorine levels. The works involve;

- Overpumping/pumping (necessary to over-pump chlorinated water away from the asset being worked on so that residual chlorine levels are acceptable),
- Scaffolding/access,
- Overbanding,
- Carbon removal (which was washed into the cells from the RGF),
- Lifting & re-bedding of hatches (to ensure water ingress through the moats are eliminated),
- Coating of upstands with Triflex ProTect, and
- Cleaning, inspection and disinfection.

We were awarded the contract in March with a value of £177k and an expected programme duration of 5 weeks. To date there have been numerous ancillary works and the anticipated final contract value is now expected to be in the region of £350k, with a subsequent programme extension of 8 weeks.



## Area 9 & Area 7 Updates

### Area 9 West Midlands -

CRL finally commenced with site set-up and construction works to P65, in January this year. P78 followed in May giving a combined total potential value of work to the business of over £19m.

It is anticipated that a 3rd smaller collection of bent structures (R181) will add to this total, securing an overall value for all 3 Oldbury projects in excess of £25m. The completion time is likely to extend over the next 2 years and will involve a number of activities ranging from straightforward concrete repairs and cathodic protection, to beam propping and strapping of cross-heads.

Recruitment of competent, qualified and experienced staff has been crucial to ensuring that we can move forward with these works and has proved to be one of the greatest challenges that we have successfully negotiated to date – more challenges will follow.

Barthomley have progressed with their parapet replacement works at J16 of the M6 and are looking for a completion by the end of August. Total value for this project will be around £1.70 m.

In the wider Area 9, there are other opportunities for CRL to excel with the next anticipated project start on site at Gravelly Hill (box beam painting) J6/M6– programmed for commencement in August - where complex ECI (Early Contractor Involvement) has resulted in final designs and methodology being agreed for CRL to erect access to blast and paint 5 steel box beam structures. While the work itself is not complicated, the path to agreeing access for scaffolds over a high-pressure gas main, high voltage power cables, canals, a river and a myriad of public footpaths has been fraught with differing stakeholder

interests and considerations. The value of the work here, is likely to be over £5m and extend for a 12 month period.

Further projects to replace 9 gantry access platforms in the West Midlands and a bridge lift over the A38 in Derbyshire are ongoing and will come on-stream over the next 12 months.

### Area 7 East Midlands -

Swinford Bridge (an overbridge to the M1 near J20), started on site in June and is programmed to complete over a number of weeks. This is the first of 2 cathodic protection (CP) projects under the SDF (Scheme Delivery Framework) that CRL have secured in this region. The second project (River Avon) is currently in the early stages of the ECI process and is programmed to reach site in early 2025. This will be a significant CP project for CRL and will be the first on the Framework, where we are not in the Principal Contractor (PC) role. The value of our works here, is anticipated at over £2m.



## Raising the Bar

CRL were recently appointed by National Highways (Area 10) to replace the existing 1.0m high parapets with new 1.8m high parapets on a number of their bridge structures around the Manchester and Warrington areas. There were a number of structures that were identified as suicide hotspots, and most of the suicide attempts were from climbing over the parapets from the footpaths. The scheme involved the installation of temporary edge protection over the motorways, removal of the existing parapet system, repairs to the stringcourse and installation of the new posts, rails, and mesh. To prevent the public from traversing along the back of the new parapet, there were anti-access panels installed at each end of the bridges.

Varley & Gulliver were employed by CRL to remove the existing parapet, as well as supply and install the new parapet. Working in collaboration with the traffic management contractors and National Highways, we managed to complete the schemes over the M60, M56 and M62 motorways with minimal amount of disruption to the travelling public and provided a high-quality product which had been commended by the client.

The total value of the schemes had contributed nearly £1.75m worth of work to the business.



## All Change for Crewe Parapet Scheme!

CRL has recently completed 3 parapets schemes within Area 10 over the M56 and M62 for National Highways. These were undertaken under the Construction Works Framework which is now under completion.

Further down the M6 Motorway on the Cheshire / Staffordshire border you will see CRL in full flow at Junction 16 Barthomley Interchange where the existing parapets are being replaced and upgraded along with associated civil works.

CRL is the principal contractor on this project which was one of the first to hit the ground under the Scheme Delivery Framework, the £3.6b National Highways renewals 6 year framework. The scheme was part of a £196m investment by National Highways to cover major trunk roads in the Midlands announced last year.

Extensive planning, early involvement and close coordination with National Highways; Safety, Engineering and Standards Directorate (SES), along with other stakeholders such as Cheshire East were essential to ensure the scheme minimised disruption. This was a vital requirement on this extremely busy section of motorway and the interchange beneath. The works are being carried out under hard shoulder closure leaving 3 lanes open in each direction.

The project is being lead by Kevin Arnold CRLs site manager and being ably supported by Owen Henderson, Phil Morgan and not forgetting Sarah Wardle who keeps the team in check!

Thanks to all the CRL and supply chain teams who are delivering yet another successful project for our long standing client National Highways.



## Kingsway Overbridges

The Kingsway Overbridges Project involved repairs to four of the road bridges leading up to the Kingsway Tunnel: Poulton Road Bridge on the Wallasey side and Limekiln Lane, Scotland Road & Fox Street to the Liverpool side.

This was an 11-week programme duration, 8 of those weeks were spent undertaking the repairs to Poulton Road Bridge as a large portion of the repairs centred around the degraded 8 columns and their base at the bridge's central pier. This consisted of large concrete breakouts and repair preparation including replacement of steel reinforcement and tie wire and steel primed with a zinc rich coating.

As per the contract specification, we installed approximately 8 galvanic anodes within the repairs and fixed to the reinforcing steel. This would help increase the life of the repair and prevent the occurrence of incipient anode effect. A rapid set repair mortar was applied, and form work installed to hold the repairs until sufficiently cured.

The repair works were undertaken within a traffic management lane closure each night provided by the client, and CRL were responsible for the safe operation of works in close proximity to live traffic. CRL's site supervisor and site engineer documented all quality assurance information including batch numbers, laying conditions and material quantities used. This information was then provided to the client as part of a H&S manual.

Overall, this was a successful project that received positive feedback from both client & designer. The project value was £115,000.



# Lifespan Structures

## Colinton Dell

Colinton Dell is a steep-sided gorge and wildlife refuge on the Water of Leith, just north of the old village of Colinton on the outskirts of Edinburgh. It extends from Colinton Parish Church towards Slateford along the Water of Leith Walkway and has an area of 10 ha (25 acres). The Dell includes mature and ancient mixed woodland and the protection afforded by the high banks and thick undergrowth makes it a natural habitat for wildlife, including numerous bird species and amphibians, voles, weasels, stoats and occasionally roe deer.

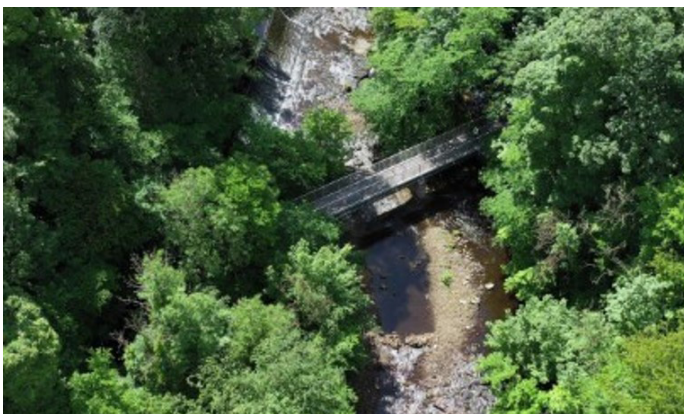
Today walkways and a cycle path take visitors to the ruined Redhall Mill and past Kate's Mill, where paper for the Bank of Scotland's first banknotes is said to have been made.

As a result of a Lifespan e newsletter campaign in the autumn of last year we received an enquiry from the Mott MacDonald team in Edinburgh. After several online meetings and an onsite visit, we developed a solution for the Client Edinburgh City Council and introduced CRL Scotland to the project team as a specialist contractor that was capable of delivering the project. Following a tender process in early 2023 CRL Scotland were awarded the project valued at circa £250,000 as reported in March of this year.

The objective of the project was to provide a replacement deck for the existing Colinton Dell Rustic Footbridge with a design life of 120 years. The existing timber deck on the footbridge was in very poor condition and a new Lifespan Structures (FRP) deck was designed, manufactured & installed by CRL Scotland as a replacement so that the bridge can be re-opened in July of this year.

Due to the very challenging location of the site the CRL team came up with a carefully thought-out plan as to how they would remove the old bridge and be able to safely install the new Lifespan FRP deck sections.

Additional challenges for the team included a high-pressure gas main adjacent to the existing bridge, the steepness of the Dell either side of the bridge location and that everything had to come through the famous Colinton Dell Tunnel. The new Lifespan Structures FRP deck was designed in house to conform with a specification provided by Mott MacDonald. The new deck of approximately 28m span was supplied in 5 sections of 5.7m long x 2.5m wide and 65mm thick that are mechanically fixed onto the existing longitudinal steel beams, that are in good condition. A new 1.5m high galvanised steel parapet was also installed.



## Cross Laminated Timber (CLT) - Rot and Remedial Works at 1 Curtain Place, Shoreditch

We're all familiar with material degradation in concrete and steel. But recently we've been challenged by a project constructed using cross laminated timber (CLT). This is a relatively modern composite material consisting of thin layers of timber (lamella) with the grain laid at right angles in each layer, bonded together using polyurethane adhesive (PUR).

CLT generally forms the complete frame of a building – the floors can be CLT, so can the walls and the roof. It can also be used in a hybrid structure with CLT floors supported by a steel frame for example.

In the past 10 years CLT buildings have grown in popularity due to their environmental credentials including:

- A sustainable timber material with good strength properties for medium to large spans (6m - 10m+).
- Lightweight material that requires smaller foundations/less use of materials for foundations compared to a typical steel or reinforced concrete structure.
- Due to pre-fabrication offsite in a factory, construction noise and dust kept to a minimum.
- Timber on show in buildings provides a more natural environment, also the cross sections char in a fire and have high fire resistance (2 hours+).

Samuely have been looking at a 6 year old mixed use building in Shoreditch. The building consists of a 3 storey steel frame with CLT floor decks to provide open plan commercial space and a roof terrace. Above this is another 3 storeys of residential flats fully made from load bearing CLT floor decks and walls.

We were initially asked to look at the residential balconies; these are steel bolt on assemblies and they had sagged to an alarming degree. Our inspections found that this was due to incorrect installation of the fixing bolts and compression of a thermal break.

During our inspections of the balconies we were also notified of rain water leaks through the roof terrace in to the commercial space under. This led to further investigations of the timber roof terrace deck.

The design and detailing of waterproofing and breathability during installation and for the life span of a CLT building are crucial in providing a durable structure which works well in the British climate.

Unfortunately on Curtain Place, numerous CLT panels were found to be compromised with fungal decay due to incorrect installation and waterproof detailing. Samuely have worked closely with Trada to identify in detail the level of CLT decay (see photographs) and provide remedial design works to correct the issues. It is suspected the contractor installed the panels whilst damp and the roof membrane locked in





## Continued...

the moisture providing perfect conditions for fungal decay.

The roof terrace was fully compromised and all CLT panels removed and replaced with a lightweight metal deck.

During the investigations it was found that the CLT rot had also occurred in the floors to the residential flats; we proposed a scheme to remove the affected panels and replace with like for like. This required pretty significant temporary works to support the load bearing CLT wall currently supported on the compromised panels.

Currently the temporary works are being revised to partially become permanent works and provide a point of intermediate support to the new CLT infill panels.

So what lessons can we learn?

- When carrying out inspections of potentially compromised CLT panels / structures, make sure to fully strip back finishes were possible or conservatively assume the worst case that CLT elements can be largely compromised if construction defects are known on site.
- Do not assume a CLT expert / Trada can fully confirm all fungal decay on site without a full strip out being undertaken.
- If replacing with new CLT, work closely with a specialist architect on sound waterproofing details, and contact a CLT specialist manufacturer/supplier early on in the project to generate economic solutions and fully coordinate design.

With the recent boom in the construction of CLT buildings it is highly likely that similar problems will become evident in the future. The combined issue of “locked in” moisture and poor waterproof detailing will inevitably lead to rot forming and this decay can lead to structural failure of roofs, floors and walls.



## The Survey and Investigation of a Salt Barn

For those that put in the miles, these structures can frequently be seen from our UK roads network, storing de-icing salt for use during the winter months.

This structure - of circa 20 years old - comprised an in-situ concrete foundation wall with a timber dome.

The manufacturer and installer had undertaken a maintenance inspection in the summer. Not all of the foundation wall was visible due to internal and external storage.

The Inspection Report concluded that the concrete was "in good order", but with some cracking and associated rust staining. This was considered so insignificant that it was not included within a breakdown estimate for repairs, to the timber work to the dome, of under £20k.

CRL Surveys were called in by the operating authority engineer, who suspected the report, the estimate for repairs, and 'small print' were inadequate. CRL Surveys investigations revealed significant potential structural deterioration.

### THE CONCRETE FOUNDATION WALL

The concrete was found visually to have deteriorated and exhibited distress in some areas, with the exposed surfaces found to be variably weathered and discoloured, generally consistent with concrete elements cast and exposed in this environment for around 20 years.



Once the salt had been removed, numerous areas of spalling and/or incipient spalling were noted around the top of the foundation wall. The cracking was found to be intermittent around most of the wall.

1. (Top) Numerous areas of spalling and/or incipient spalling were noted to the top of the foundation wall. An incipient spall can be seen above.
2. (Bottom) Again, spalled concrete noted at a construction joint, the extent of further delamination is highlighted by the blue chalk marks.



## Continued...



1. (Left) A vertical crack noted running downwards from the top of the foundation wall. Note the rust staining, indicative of reinforcement corrosion, or corrosion of the vertical restraint fixing for the domed roof.
2. (Right) Cracking and associated rust staining indicative of corrosion of the reinforcement beneath.

The relative depths of cover to the reinforcement and carbonation indicated that in most of the areas tested the carbonation front had not yet encroached upon the reinforcement.



The chloride ion contents, by weight of cement at the levels of the reinforcement, were found approximately to range from 0.2% (externally) to 6.5% (internally).

For concrete of this age, with the carbonation and levels of ingressed chloride recorded, BRE Digest 444 would suggest risk categories ranging from 'Negligible' to 'Extremely high' in terms of the potential for steel reinforcement corrosion.

Various investigations of the reinforcement, using measurements of half-cell potential and resistivity, generally confirmed that the reinforcement, in the internal areas where the concrete was exposed to de-icing salts, was probably actively corroding.

In the condition noted, with a worst case 'Extremely High' corrosion-risk, and if the exposure conditions were to remain the same, the prognosis would obviously have to allow for continued corrosion of the reinforcement, spreading from affected areas.



3. (Top) Some areas of surface loss of the fine aggregates were noted to the lower part of the foundation wall.
4. (Bottom) An area of mechanical damage to the foundation wall.

## Continued...

1. (Top) Some evidence of poor compaction of the concrete during construction was noted to the wall/ base slab junction around the external perimeter of the foundation wall.
2. (Bottom) Although not a concrete defect, the flashing to the top of the wall was found to be damaged externally, which allowed water to run off directly onto the wall.

### CONNECTION OF TIMBER DOME TO CONCRETE FOUNDATION WALL

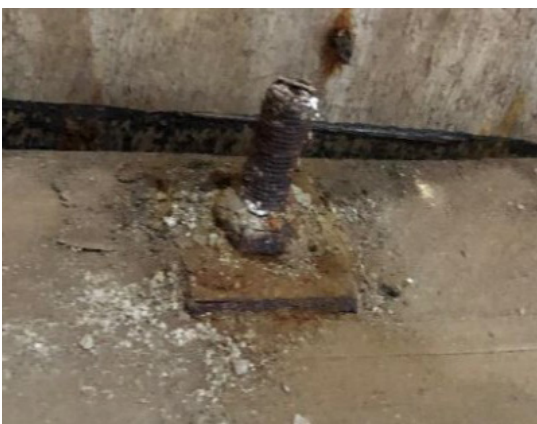
Inspection indicated 4 connections fixing each roof panel to the top of the foundation wall, each comprising a mild-steel threaded rod, capped with mild-steel washer and nut.

As illustrated below, many of the exposed connection tops, the washers and nuts were corroded. Around much of the top of the foundation wall the concrete was cracked and spalled.

The condition of the exposed portion of the connections, and the close association of delaminated, cracked and spalled concrete around the top of the foundation wall, indicated the likelihood of extensive structural repair required around the top of the foundation wall,



with a probable requirement for temporary support of the domed roof.



(Left) shows a close-up of a fixing. (Right) shows a typical panel, with 4 fixings. Note also the cross-hatched areas, indicating hollow and delaminated concrete, associated with corrosion of the reinforcement.

# Social Value

46.93  
(existing)

GARDEN

## Education & Careers Engagements

In recent months, CRL have supported a number of education and careers events across the country. Here are a few examples (of many!).

In the North East, CRL continued our work with Novus (prison education and employment organisation) by attending two Unlocking Construction Events at HMP Northumberland and HMP Holme House. Both events gave offenders nearing their release date a chance to meet and ask questions of employers, give out their CVs and improve their employment prospects upon their release. At both events, we spoke one-on-one with many inmates, offering guidance on entering the construction industry and liaised with Novus about interviewing any promising candidates upon their release.

Also in the North East, CRL once again attended the National Highways Construction Careers event at Durham New College. The event is organised by the National Highways Community and is attended by multiple organisations working in the region. Throughout the day, students at the college and surrounding schools have a chance to learn about the sector and career opportunities within it including apprenticeships.

In the North West, CRL's M6 River Dane site hosted 30 engineering students from Liverpool John Moore University. We have a strong relationship with the university due to our presence in the North West. During their visit students had the opportunity to meet with several members of our River Dane team and a representative from National Highways. Students had a tour of a live site, discuss and see the different types of works we are doing, such as concrete repairs and cathodic protection. We also discussed other areas of our business such as social value, sustainability, health and safety. Overall, students were able to visualise concepts they had learned at university in a live site setting and gain a greater understanding such as River Dane operate.



# Social Value

4693  
(existing)

GARDEN

## Woodhill House Care Home, Morecombe - Garden Renovation Project

CRL spent two days at Woodhill House Care Home completing painting, gardening and basic repairs in the gardens areas of the care home. Woodhill House care for elderly people with dementia and Alzheimer's. Their garden areas were an important facility for residents, however they had fallen into disrepair due to lack of funding to maintain them. Sadly, this left it unsafe for residents to use.

After many unsuccessful appeals for help, CRL were contacted by the Lancashire Volunteer Partnership and asked to help out (we were asked because a few months earlier we had given similar support to a care home in Lancaster). After two days at Woodhill House, the outdoor areas were safe to use and visibly more pleasant. We are glad residents will once again be able to enjoy the outdoor areas of the care home.



# Social Value

4693  
(existing)

GARDEN

## Community Support with National Highways

As part of the National Highways Yorkshire & North East Group, CRL supported a volunteer day at St Luke's Charity, Sheffield. St Luke's is the only charity hospice and community outreach within Sheffield that cares for terminally ill adults. The YNE group supported the charity by sorting through donations in their warehouse, processing £2,800 worth of donations. The event fell on "Blue Monday" (saddest day of the year) and also served as a day of promoting good mental health, hence the wearing of pink.

With the same group, CRL accompanied other community members in planting 1000 bulbs in three locations around Sadberge village. A range of perennial native bulbs were chosen to bring a splash of colour throughout the year. The bulbs will help increase biodiversity in the area by attracting pollinating insects to the flowers. A picturesque welcome to the village for residents and visitors alike.



With the National Highways Midlands Collaborative Community, CRL were involved in the playground refurbishment project at Ilkley Place, Newcastle-Under-Lyme. The playground was in need of fresh paint on all the frames of swings, slides, and climbing frames. This project involved members of the MCC - a truly collaborative effort!

## Family Activity Pass, Galashiels

As part of our works on the Netherdale Stand in Galashiels, CRL joined forces with Live Borders to provide funding for delivery of free physical activity opportunities for low-income families who may be otherwise be excluded. This support builds on the success of the Family Activity Pass that Live Borders operated through the summer of 2022.

"The cost of living crisis presents a real threat to families physical and mental health and wellbeing and we are excited to work in partnership with CRL. It is fantastic to secure this additional funding from CRL, and it will be targeted at those families most in need of support. We want to thank CRL for opening more opportunities for our local communities to be healthier, happier and stronger." - Graeme Murdoch (Active Communities Manager).

Live Borders have been coordinating with referral partners to identify those most in need. Progress with the programme is going well, uptake is good, particularly as we enter the summer months. Passes were recently given to a Ukrainian family who relocated to the area as a result of the war. It is great to see the programme is making a real difference in the local community and we are proud to have played a part.

# Congratulations!

## Adam Drzazga - Record Breaker!!

A few words from Adam...

This year again I had a pleasure to represent Great Britain in AIDA Freediving World Championship held in small island called Jeju in South Korea .Beautiful island with rich traditions and history.

This year was 5 of us competing 3 guys and 2 girls ,2 of us living in UK ,1 in Australia and 2 in Singapore.

Nearly 200 competitors from all over the world competed for podium .During the event multiple National Records have been broken as well as continental records ,with that one world record was also achieved by Polish freediver.

For me the first day was a success as I'd manage to break NR for GB swimming 208m distance using fins ,the five was challenging and took over 3:40 swimming on single breath of air. Months of training, physical, mental and pool drills and sacrifices had to be made to prepare for single attempt. But it was all worth it to become UK champion again .

I'm hoping to wave the British flag again in Cyprus death World Championships this September if I'm able to raise funds and sponsorship and get enough training to be in the shape to represent the Country.

Sport of freediving is unique and hold many miseries, it requires mental and physical strength, commitment, and many sacrifices, but it will teach you patience, relation, build your mental strength. With all of that you will meet new people travel to new destinations and learn new things about the countries and cultures ,expand your understanding of the world and gain many new experiences.





# Congratulations!

## Callum Cruse-Morrell - Wedding Celebrations

All at CRL would like to send our congratulations to Callum Cruse-Morrell on his recent marriage to Holly. Here are a few words from Cal:

Holly and I got married on 23rd May 2023 at the West Bridgeford Registry Office in Nottingham. Our wedding was postponed due to Covid, the arrival of our son, Arlo in July 2021 and buying our first house last year!

We wish Holly and Cal all the best!

