

06
RENEWING
THE ROAD PAST
STONEHENGE

08
ROADBOTICS
ARTIFICIAL
INTELLIGENCE

18
TIME SAVING
MOTORWAY
RESURFACING



AUTUMN 2019

CONSTRUCT



Foreword



Michael Conway MBE

CEO FM Conway

OUR STRONG COMPANY VALUES AND SELF-DELIVERY CAPABILITY PUT US IN A GOOD POSITION TO DEVELOP STRONG AND LASTING RELATIONSHIPS WITH OUR CLIENTS.

The construction industry landscape is changing, with more direct contracts being awarded by local authorities, county councils and strategic road network operators. This is great for us, because the way we work and the values we have as a business are ideally suited to long-term contract relationships, so our opportunities should continue increasing.

Our capability in self-delivery offers huge benefits within this type of business model, and is already proving very successful on our existing contracts. I am sure even more clients will recognise the benefits of self-delivery and the efficiencies it unlocks.

This issue of Construct showcases our new artificial intelligence partnership that will transform highway asset management. It also demonstrates delivery of our latest innovations in recycled asphalt pavement on the strategic road network.

It is great to see how many of the projects in this issue demonstrate the success of our self-delivery model in action, as well as showing how we bring our company values to everything we do.

Clients embarking on long-term contract relationships want to work with partners with values they can identify with. Our values underpin everything we do, and give us a great blueprint for working with other organisations. They are:

Care As a family business we act with care and compassion
Excellence Great people delivering great work, always
Integrity A business committed to doing the right thing
Innovation Our passion is to always find a better way

I am confident that, as long as we remain true to these values, and continue to work hard, the future will take care of itself.



Contents

- 03 **CONTRACT HIGHLIGHT**
- 04 **M25 RESURFACING**
RECYCLED MATERIALS
- 06 **STONEHENGE**
LOW TEMPERATURE ASPHALT
- 08 **ROADBOTICS**
MAINTENANCE TECHNOLOGY
- 10 **CAMBERWELL**
BETTER PUBLIC REALM
- 12 **CYCLEWAY 34**
TFL CYCLE NETWORK
- 14 **5 MINUTES WITH**
KAMAL UDDIN
- 16 **ERITH WHARF**
SAFETY UPGRADE
- 18 **M2 IMPROVEMENTS**
MOTORWAY SURFACING
- 21 **NEWS IN BRIEF**
- 22 **EMPLOYEES OF THE QUARTER**
- 23 **A JOB WELL DONE**

Contract



LOW CARBON MERTON

Above: FM Conway has worked on Merton's streets for the last 40 years

FM Conway's new seven-year contract with Merton Council demonstrates how an existing long-term relationship can be refined to support the client's wider ambitions, in this case to be a leader in the low carbon economy.

The new £60 million deal through to 2026, with a potential three-year extension, will see FM Conway introducing fresh ideas to meet climate change objectives, and give Merton access to innovations that FM Conway is developing in-house.

Merton Council has declared a climate emergency, and part of FM Conway's role is to tackle air quality, transport emissions and carbon reduction.

"We will be focused on how we carry out works to avoid air quality issues, as well as

improving the sustainability of public realm projects and installing sustainable drainage," says FM Conway's term maintenance director James Tallon.

FM Conway already recycles 100% of Merton's used road material, and the company will now work with the borough's climate change officers to reduce transport emissions. The new contract also includes a joint innovation forum to develop new ideas to cut costs and carbon.

Merton Council's cabinet member for regeneration, housing and transport, Councillor Martin Whelton, says: "FM Conway has been one of Merton's key partners for the past 40 years. This contract is a significant investment in the council's commitment to maintaining and improving key infrastructure in the borough."



RAP ARTISTS

THE M25 BECOMES THE FIRST SECTION
OF THE STRATEGIC ROAD NETWORK
TO BE RESURFACED WITH 50% RAP

Current highway design standards allow for UK motorway surface courses to contain a maximum of only 10% recycled material. But in September this year, FM Conway supplied an asphalt surface course to be laid on the M25 that contained 50% recycled asphalt pavement.

The success of this project paves the way for greater use of recycled material on UK roads, which could result in huge environmental benefits across the trunk road and motorway network.

FM Conway is well known for its expertise in recycled materials and has previously supplied surfacing material with 50% recycled aggregate pavement (RAP) to two roads on Transport for London's network: the A1 and the A40. But this is the first time a surface course mix containing such a high proportion of recycled material has ever been laid on the strategic road network.

For the M25 contract, FM Conway designed a surface course containing 50% high polished stone value (PSV) recycled aggregate in collaboration with surfacing contractor Toppesfield and Skanska UK. PSV is an important measure of the skid resistance of the surface, and motorway surfaces require stone with a high PSV.

The surface course was made by mixing the RAP with virgin aggregate and FM Conway's own designed and manufactured polymer modified bitumen (PMB). The addition of PMB to an asphalt mix can significantly improve the durability of the surface course by improving resistance to rutting and cracking.

The RAP for the M25 project came from two "donor" sites. Before planing, FM Conway took 24 core samples on the two sites and tested the material in its laboratory to ensure it would be suitable for the mix.

FM Conway's head of technical Mark Flint says: "Extensive core sampling and testing was imperative, as we were looking for the correct grade of aggregate as well as the right polished stone value. Being able to carry out the research and development at our technology centre and engineer a bespoke PMB at our plant was beneficial to the success of the mix."

Opposite: High PSV RAP before going through the plant

RECYCLING A ROAD



DONOR SITES SELECTED

Suitable material found on roads due to be resurfaced



CORE SAMPLES TAKEN

24 cores taken to check for the right grade of aggregate



50% MIX DESIGNED

Lab trials to get the right mix of RAP, virgin aggregate and PMB



260t LAID

The 50% RAP surface course laid during a single overnight closure

M25 PROJECT



"Quarries and bitumen won't last forever, but there is a quarry out there - in the form of existing roads"

The mix was specifically made for this project and was then laboratory tested to prove that the 50% RAP surfacing material would meet all the requirements that a traditional surfacing material would achieve, while being far more sustainable.

The planings from the two donor sites were taken to FM Conway's Colthrop recycling plant near Thatcham in Berkshire, where they were crushed, screened, tested, segregated and stored. The day before the material was due to be laid, the planings were transported to the company's Heathrow recycling and asphalt plant for mixing with the virgin aggregate and PMB.

On the night of the closure, FM Conway's trucks took the mixed surfacing material to the site. A total of 260t of the material was laid by Toppesfield on a section of lane on the anticlockwise carriageway of the motorway, to a depth of 45mm.

"The project's success was a result of a big collaborative effort by Skanska UK, Connect Plus Services, Toppesfield and FM Conway," says Mark.

This ground-breaking project demonstrates that higher percentages of RAP content should be used on the strategic road network. It has huge environmental benefits: aggregate and bitumen are finite resources, whereas planings are readily available as a by-product of road improvements. Mark says we should think of the existing road network as a quarry, and by making use of it we can reduce both carbon emissions and transport movements.

"Quarries and bitumen won't last forever, but there is a quarry out there - in the form of existing roads - that we can tap into and use," he explains. "Recycling worn out material from the road network enables us to stop importing so much material and bring it from only a few miles away."

STONE COLD SUCCESS

THE USE OF INNOVATIVE LOWER TEMPERATURE MATERIALS HAS ENABLED FM CONWAY TO SIGNIFICANTLY REDUCE THE A303 RENEWALS PROJECT PROGRAMME



The A303 in Wiltshire is one of the best-known roads in the south of England. It is a picturesque trunk road, familiar to thousands of people who head to the South West for their holidays every year.

What makes the road stand out is its location. On the section between Winterbourne Stoke and Amesbury, drivers are treated to the sight of one of the UK's most historic ancient monuments: Stonehenge.

FM Conway has delivered a surface course on this section of the A303, using lower temperature asphalt to reduce disruption.

The road carries an average of 26,000 vehicles a day – increasing to 30,000 during peak times – which includes holidaymakers, local traffic and a lot of heavy goods vehicles. Highways England has ambitious long-term plans to upgrade the A303 near Stonehenge, but in the meantime it has to ensure that the existing road is up to standard.

The high traffic volumes have taken their toll on the road surface, resulting in the need for it to be resurfaced.

FACTS

Project
A303

Client
Highways England

Value
£483,000

FM Conway division
Aggregates & Asphalt

Contract period
June-July 2019

Materials
2,500t of lower temperature asphalt

In some places the entire depth of the road pavement was damaged, and had to be replaced, says FM Conway's business development director Nick Burman: "The main treatment was the replacement of 50mm surface course across the whole scheme. But within that, there were areas where there was structural damage to the pavement, and here we had to reconstruct to different depths to provide a stable base for the surface course."

The solution varied according to the nature and severity of structural failure and location. In all, there were 14 different pavement treatments, ranging from planing 50mm off the existing surfacing and replacing it with a new thin surface course through to complete 180mm reconstruction of base course, binder course and surfacing.

"In an ideal world, we would have planed 50mm off the whole area, then gone deeper where we needed to, before laying all the new material," explains Nick. "But we had to do all the work during night-time closures between 10pm and 6am. Whatever section we worked on had to be completed in time to reopen it in the morning."



The A303 at Stonehenge is one of England's best known stretches of road

He adds: "This is the biggest challenge on all Highways England schemes - making sure the road is fully operational. We typically aim to finish laying at about 4am, which gives the material time to cool ready for traffic, and also gives the white lining contractor time to do their work, and for the traffic management to be removed."

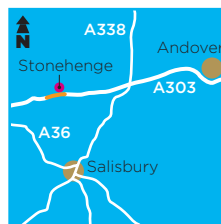
FM Conway realised that one way to maximise the amount of work delivered each night was to use lower temperature asphalt throughout the reconstruction and surfacing.

"Lower temperature materials cool faster, increasing the speed of the laying process, and allowing the road to open in a more timely manner," Nick explains.

Lower temperature asphalt is still relatively new, but is becoming more widely accepted because of its efficiency benefits.

"By using lower temperature asphalt we reduced the programme by two days," says Nick. "It enabled us to do larger areas each night, which had a major impact on the availability of the network."

A303 CLOSURE

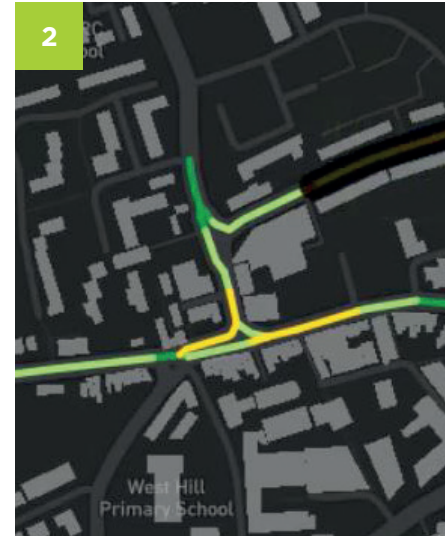


Cutting the programme by two nights also had health and safety benefits, by reducing the number of times traffic management had to be implemented.

During the project the team also managed to safely remove and dispose of tar that was found during the works. A total of 600t of asphalt waste containing coal tar (AWCCT) was removed and disposed of in a licensed facility.

FM Conway is an industry leader in materials recycling in the south of England and, under normal circumstances, recycles highways arisings at its static crushing, washing and grading plants. The company recently installed a foam plant at its Heathrow asphalt plant, which offers a closed loop recycling solution for AWCCT.

The A303 project was completed in nine full overnight road closures, between 25 June and 9 July. During that time, FM Conway's surfacing business partner Toppesfield laid a total of 2,500t of asphalt for the different pavement treatments, all supplied by FM Conway's asphalt plant at Theale.



STREET

ROADBOTICS ARTIFICIAL INTELLIGENCE TECHNOLOGY IS ALLOWING UK HIGHWAY AUTHORITIES TO ASSESS THE CONDITION OF THEIR CARRIAGEWAYS MORE EFFECTIVELY THAN EVER BEFORE

FM Conway has launched an artificial intelligence (AI) based method of pavement condition assessment that is set to transform highway asset management. The system, known as RoadBotics, provides objective, time saving and affordable analysis, making planned maintenance simple and achievable for hard-pressed highway authorities.

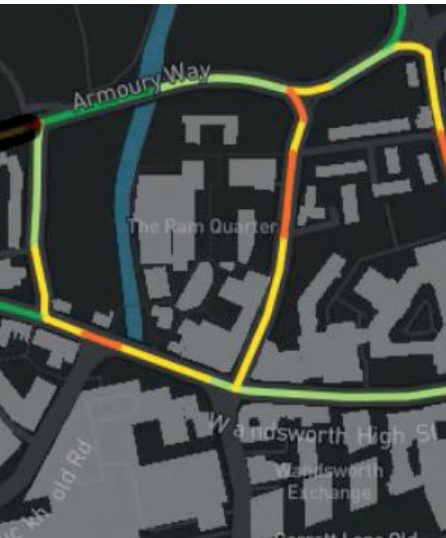
"We saw the tremendous potential of RoadBotics and became the UK delivery partner," says FM Conway's consultancy director John Holliday. "We subsequently conducted successful trials in London and the South East and are now carrying out carriageway assessments for a number of highly impressed clients."

The system works by collecting images of the carriageway along a specified route using standard smart phone camera technology, with the phone mounted in a conventional electric vehicle. Pictures of a transverse section of the road in front of the vehicle are taken every 3m, and then uploaded to the cloud.

RoadBotics AI technology, which employs machine learning algorithms, scans each image pixel-by-pixel to award surface condition ratings on a scale of one to five, based on the type, frequency and severity of surface defect.

"Level one indicates there is little or no surface damage, while level five warns of critical failings in the surface," John says. "The results are compiled and, together with corresponding images, made available to clients to inform their future maintenance strategies."

The assessment data can be viewed via RoadBotics's interactive web-based RoadWay platform. This is user-friendly, allowing surface condition ratings to be overlaid on a client's network map to build a picture of where deterioration exists and what the maintenance priorities should be.



WISE

"RoadWay lets you access your surface data from wherever you are, as long as you have a wifi connection," John says. Alternatively, clients can receive files containing their carriageway surface condition results, plus picture links for importation directly to their own asset management systems.

The combination of FM Conway's ability to carry out accurate and practical assessment of road condition, backed up with photographic evidence, using RoadBotics, plus the system's comparatively low cost is proving attractive to clients. Initial trials were carried out in the summer for Westminster City Council, which subsequently ordered a survey of its whole network. Croydon and Hammersmith & Fulham have also commissioned full surveys.

A 200km long trial for Transport for London has been completed and is currently under evaluation, as is a survey of the A249 DBFO for Highways England.

"What clients appreciate almost above everything else is the objectivity of our AI based technology," says John. "It is not like

HOW IT WORKS

1 A smart phone mounted inside a vehicle collects images of the carriageway every 3m

2 The AI technology scans the images and awards surface condition ratings

3 Clients can view information about defects backed up by photographic evidence

traditional road assessment methodology, which relies on a perceived visual analysis, usually by several independent inspectors, giving varied results. The results of the analysis with RoadBotics is consistent, and therefore gives highway engineers an accurate tool to assist with value managing their asset."

The AI can recognise a wide range of defects, including potholes and fretting, chip loss, reflective cracking, failed utility joints and concrete spalling. And 'deep learning' algorithms embedded within RoadBotics will be continually refined to improve the system's performance.

"I believe RoadBotics is the best option for decision makers, to help them develop preventative maintenance strategies that optimise whole life cost and asset performance," John says.

RoadBotics president, Benjamin Schmidt adds: "RoadBotics is proud to be working with FM Conway to provide objective road assessment data for their clients. We're excited that they share our innovative spirit and desire to optimise this process."

SCENE SHIFT

EFFECTIVE COMMUNICATION AND CONSIDERATE CONSTRUCTION ENSURES SUCCESSFUL DELIVERY OF PUBLIC REALM IMPROVEMENTS IN CAMBERWELL, LONDON



Denmark Hill is renowned for its bustling streets full of people, traffic, 24-hour bus garages and the presence of King's College Hospital, one of London's most important medical facilities.

CONWAY AECOM, FM Conway's joint venture with AECOM, was commissioned by the London Borough of Southwark to improve the roads and footways in Camberwell. A principal objective was to ensure the safer movement of pedestrians and cyclists while also upgrading the area's public realm.

Work began on site in July 2018. The local community was kept informed at all times, and was crucial to the successful delivery of the project. FM Conway's public liaison officer, Helen McConnell, was instrumental in coordinating communications between all stakeholders, ranging from the business community to King's College Hospital.

Helen became a familiar sight and gained the confidence of locals who didn't hesitate to stop her in the street or call on her phone. "Everyone got to know me and knew that, if they had problems, I would listen and try to get matters resolved," she says. Newsletters and mail shots – for instance on changes to bus routes, bus stops and alterations to

CAMBERWELL



junction alignments – were used to good effect.

"I don't think we had any adverse comments about the works," confirms Richard Wells, group manager for transport projects at Southwark Council. He adds: "To receive zero complaints about such a high-profile location over the period of its enhancement is literally unheard of."

HISTORY UNCOVERED BENEATH THE ROAD

The cellars of properties adjacent to the road improvements were surveyed to assess their structural condition prior to work beginning. A surprise late finding was of two ancient but well preserved bread ovens that extended 3.6m out under the

pavement and carriageway of Daneville Road.

"The ovens are a small but valuable and delicate piece of history, and our resurfacing plant is extremely heavy. We made special efforts to evaluate the loadings that would be imposed by our activity

and the bread ovens' ability to withstand these," says Jon Russell, FM Conway's contracts manager.

This attention to detail exemplifies the care taken by Southwark Council and its term maintenance contractor CONWAY AECOM.



“We wanted to deliver this public realm upgrade with minimum impact on the public and stakeholders”

Camberwell’s urban upgrade has been extensive. Concrete paving slabs were removed and replaced by nearly 3,000m² of York stone. As part of an initiative to maintain heritage and boost sustainability, original granite kerbs were also reused.

In total, 5,500m² of carriageway have been resurfaced, levels altered and ironwork raised to accommodate the changes. Footways have also been widened, two pedestrian crossings installed and a major junction upgraded.

“All the while we’ve had to provide access to King’s College Hospital, to two bus garages, the shops, even a 24-hour McDonald’s,” says FM Conway’s contracts manager Jon Russell.

FACTS

Project
**Camberwell
Public Realm
Upgrade**

Client
**London
Borough of
Southwark**

Value
**£1.2M
(projected)**

FM Conway
divisions
**- Term
- Surfacing**

“Foremost in our minds has been keeping pedestrians, cyclists and - importantly - our workforce safe.”

The complexity of the project is evident by the number of alterations to traffic management layouts. “We logged up 29 significant changes during the six phases of activity - not including surfacing - to ensure the work was delivered in a safe manner,” says Jon.

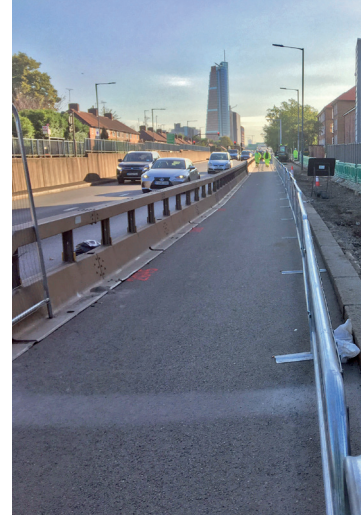
FM Conway put considerable effort into planning and programming in the months before work started. “We work closely with the London Borough of Southwark to ensure that all work is delivered to optimum standards,” Jon says. “We wanted to deliver this public realm upgrade with minimum impact on the public and stakeholders.”

Richard adds: “The relationship between ourselves and CONWAY AECOM is a longstanding one and we collaborate well on project delivery. The public realm activity in Camberwell is a good case in point: it’s gone well and the improvements look really good.”

After a year spent improving Camberwell’s streets, FM Conway completed the work in the summer.

Project

Traffic management keeps workers and pedestrians safe as the new cycleway is built alongside the A40



SMOOTH CYCLING

SELF-DELIVERY IS KEY TO THE SUCCESS OF TRANSPORT FOR LONDON'S CYCLEWAY 34 CONTRACT, WITH ITS COMPLEX LOGISTICS AND TRAFFIC MANAGEMENT DEMANDS

FM Conway's civil engineering division is delivering Transport for London's (TfL's) Cycleway 34 project in west London. The project involves creating a 5.5m wide cycleway, including a segregated footway, with a new asphalt surface.

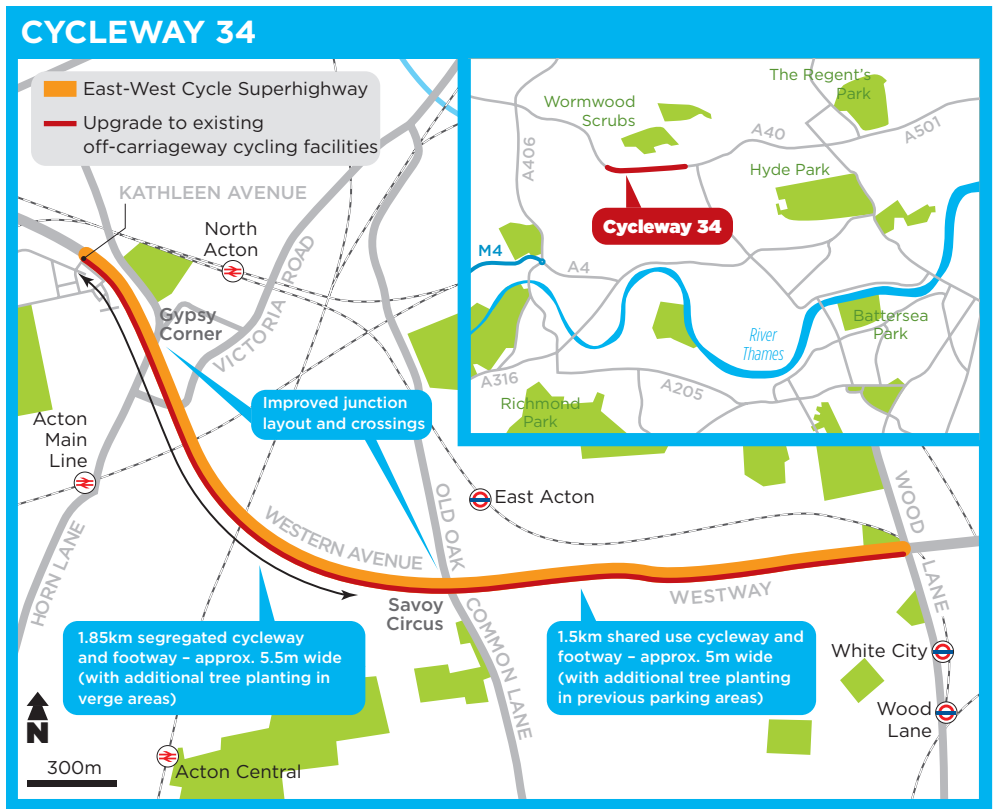
The greatest challenge to the workforce is the location of Cycleway 34 alongside the westbound carriageway of the A40, one of Britain's busiest roads. With high traffic levels, the complexity of the project increases greatly.

"Managing the traffic, gaining access to our sites, getting muck away and delivering plant and materials are virtually all daily logistical challenges," says civil engineering contracts manager Martin Phipps. "Being part of FM

Conway means we can draw on substantial in-house resources for nearly everything that we need, crucially, when we need it."

His sentiments are echoed by Transport for London (TfL). "We are protective of our strategic road network and don't easily give up space - like the A40's westbound inside lane for instance," says TfL's project manager Daniel Wilson. Possession of this lane is essential for FM Conway in order to carry out its cycleway work. "When we do allow lane closures, we examine very carefully all plans to manage traffic and reserve the right to alter schedules in light of changing circumstances."

Daniel pays tribute to the beneficial flexibility made possible by FM Conway's ability to



self-deliver. "It means the team can respond quickly to programme changes, for example, and this is an enormous plus." He adds that TfL's contractual relationship is with its term maintenance contractor CONWAY AECOM. "All of which enables further synergies between us to get the job done well and efficiently," Daniel says.

Getting down to detail, Martin explains how the works will be constructed in 400m segments, starting at Wood Lane then moving west to Acton in a sequential manner. "Our work includes removal of existing A40 footway and verge, with all concrete sent for recycling at FM Conway's own recycling plant," says Martin. "Excavation to the right line and level then follows, with the placement of granular sub-base after."

Asphalt for the cycleway's base and surface courses is supplied by FM Conway's Heathrow asphalt plant and delivered by the company's surfacing division. "The cycle lane is separated from the footway by cycle delineation kerbs to assist the visually impaired. We're also installing new granite kerbs for the A40 with trees being planted in verges as necessary," Martin says.

FACTS

Project
Cycleway 34

Client
Transport for London

Contractor
FM Conway civil engineering division

Value
£3.9M

FM Conway divisions
- Surfacing
- Aggregates & Asphalt
- Traffic Management

Carefully planned and meticulously executed traffic management is crucial to the success of the project. FM Conway's traffic management teams are able to manage traffic flows while taking possession of the A40's west bound inside lane.

Changes are made at night when there is a reduced flow of traffic with Asset Varioguard steel barrier being installed to protect the workforce. "Keeping pedestrians and cyclists safe is a key priority, with temporary traffic light controlled crossings of the A40 installed where they're needed," Martin says.

Martin is keen to highlight the use of FM Conway's own Reimer volumetric concrete mixers which significantly reduce wastage. "The vehicles mix concrete on site to the exact quantities required, meaning there are no left over metres of ready mixed," he says. "There's no waste, of either concrete or money."

When complete, Cycleway 34 will add 3.5km of protected cycleway to those already delivered across the capital, including London's main east-west cycleway from Barking to Lancaster Gate. Work on Cycleway 34 will finish early in 2020.

ON THE DIGITAL TRANSFORMATION DIVISION

5 MINUTES



KAMAL UDDIN
HEAD OF BUSINESS TRANSFORMATION
& TECHNOLOGY

Q What is the focus of business transformation?

A The short answer is data. Data is arguably the most valued commodity in the world, ahead of oil in fact! We've been collecting data for years but the way in which this information had been collected made it difficult to use effectively. Now we have the ability to really use our data to deliver our core values of Excellence and Innovation, reinforcing the role of the business transformation & technology team which is to provide the channel for continuously improving all aspects of our business.

Our mantra is "we deal in facts" so when it comes to making business decisions, we need the data to back up the case for change. A sound case supported by accurate data will turbocharge the development and growth of FM Conway.

Q What innovations are you investing in?

A We recently invested in cutting edge analytics technology to change the way we manage and interpret data. We now look at data in a dynamic way, referencing historical performance, tracking trends and producing "what if" scenarios to predict situations and plan ahead.

It's been positive to see innovations coming into the business directly from operations too. Our lighting and water and drainage teams are using Internet of Things technology to work smarter around asset management. And our consultancy division is using AI and smartphone technology to introduce revolutionary methods of assessing road conditions (see page 8).

We have also created the first self-delivered mobile app for our term maintenance teams as a major step towards a fully digitised workforce.



Q Is FM Conway ahead of the competition on this?

A The construction industry as a sector lags behind other industries in the digital revolution. This offers significant opportunity to get ahead of the curve by responding to change and acting swiftly.

We are working on some cutting-edge solutions and constantly scanning the horizon, looking for new developments and industry trends.

We are recognised as leaders in our field and are privileged to have been working closely with the Department for Transport as one of only two contractors as beta testers for the new 'Street Manager' permitting system. The system will be rolled out to all local authorities by the DfT in 2020. As an 'early adopter' we will have a head start on integration with our clients and have been able to influence the design to work optimally with FM Conway systems.

Q What new initiatives should we look out for?

A One of the big projects we are currently working on is the Transport Management System (TMS), which was borne out of our continuous improvement programme.

The TMS will enable FM Conway to plan and execute transport operations, providing visibility of the fleet and deliveries, and business insights for both our aggregates & asphalt and transport divisions.

It will include a customer portal so that customers can track their deliveries.

We'll also be taking electronic orders for aggregate and asphalt products online, which will allow our customers greater flexibility with how they place their orders.

Q What about the future?

A Our exciting developments would not be possible without the skill and dedication of our IT team; we must remain an attractive place to work in order to retain great people with valuable skills.

We are proud to have an enviable technology estate that we constantly maintain and upgrade so that we continue to enjoy uninterrupted service.

There are three digital advancements that will help us with our transformation efforts: bandwidth, digital storage and processing power. 5G offers significant opportunities and advancements in mobile computing and cloud technologies that will make cumbersome back-office processes more efficient and able to be driven from the field, where we do our most important work.

SHIP TO SHORE



UPGRADES WERE CARRIED OUT
TO FM CONWAY'S ERITH WHARF
OVER THE SUMMER – NO MEAN
FEAT WITH SHIPS COMING IN 24/7

FM Conway's wharf at Erith in south east London is in almost constant operation, handling over 100 ships a year laden with aggregate for road materials. So it is no easy task to schedule improvements to the wharf's equipment and facilities.

The wharf was commissioned in 2011 to enable FM Conway to import its stone directly. Recently, the company has invested in a programme of improvements at the wharf whilst at the same time keeping it operational.

"We have been making major improvements to our wharf over the last 18 months," says FM Conway's wharf & marine manager James McGarrity. "This comes with many challenges because of the constant supply of aggregate coming in for the business. Work to the wharf has to be done in between vessels, and ideally not while a vessel is at the berth - which is tricky when ships come in 24hrs a day, seven days a week."

Each year, FM Conway brings in around 400,000t of aggregate from long-term supplier Conexpo in Belfast on ships that each carry between 3,500t and 5,000t of stone.

The ships berth at the jetty and are unloaded using a 90t Sennebogen 860 long reach excavator with a clam shell bucket capable of picking up 5t of aggregate at a time. The excavator loads the stone into a 30t-capacity hopper, from where it goes via an impact conveyor onto the main incline conveyor, which, at 150m long and with an incline of 30°, can handle 500t of aggregate per hour.

At the top of the incline, the belt turns through 45° towards the main building, where aggregate is discharged into one of eight storage bays, ready for transport to the company's six asphalt plants.

Improvements have been taking place throughout the wharf, including a new access platform on the main incline conveyor, replacement timbers at the jetty and a

Opposite: Stone is unloaded from ships and placed in the hopper using a long reach excavator

ERITH WHARF IN NUMBERS

100

ships per year of aggregate for road materials are handled at Erith Wharf

400,000t

of aggregate per year brought in by FM Conway from Conexpo, Belfast

5,000t

of aggregate can be carried on a ship

5t

of aggregate can be picked up at a time by the long reach excavator

500t

of aggregate per hour can be handled by the impact conveyor

30,000t

of aggregate received in two weeks this summer was a record amount



pedestrian gangway to get onto moored vessels.

The new platform provides better access to the incline conveyor's belt tensioning system, enabling James's team to perform maintenance checks and work with improved safety. The platform was fabricated in-house and installed by FM Conway's fitters in just two weeks.

The same team is fabricating the new ship-to-shore gangway, which can be lowered onto a ship's deck to provide safe access for wharf operatives, shipping agents and crew, eliminating the need to climb down ladders above water.

Another safety improvement is the replacement of old timbers on the access road to the jetty. The original timbers had suffered from weathering, so FM Conway is replacing them with a much stronger oak timber that should last another 15 to 20 years. In all, 200 timbers are being replaced, each weighing 750kg.

Most of the work was completed over the summer, which is traditionally a very busy time at the wharf. This summer was no exception: the wharf had a record two weeks in which almost 30,000t of aggregate arrived from Belfast.

SURFACE TENSION

A FULL WEEKEND MOTORWAY CLOSURE GAVE THE PERFECT OPPORTUNITY TO MAXIMISE OPERATIONAL BENEFITS IN RESURFACING

Motorway resurfacing is usually carried out during night-time closures, to avoid disrupting drivers. But in July 2019, Highways England took the unusual step of closing a 19km section of the M2 in north Kent for an entire weekend to allow planned maintenance to be carried out.

The closure gave FM Conway the opportunity to demonstrate the advantages of its full service capability when it comes to resurfacing.



FACTS

Project
M2 Stockbury to Champions Court

Client
A-one+ for Highways England

Value
£550,000

FM Conway divisions
**- Surfacing
- Aggregates
& Asphalt**

Contract period
July 2019

The company was brought in by Highways England's asset support contractor A-one+ to resurface the dual two-lane carriageway between junctions 5 and 6 near Sittingbourne. While the coastbound carriageway resurfacing was done during four night-time closures, the resurfacing on the London-bound carriageway all took place during the full closure of the motorway over the weekend of 12-15 July.

On both carriageways the work involved planing out the existing road construction to a depth of 50mm and replacing it with a new 50mm asphalt surface course. In addition, some sections required a further 50mm to be taken out and replaced with 50mm of new binder course before being topped with the new thin surfacing.

In total, FM Conway laid an area of 5,575m² with both binder course and surface course, and a further 19,660m² of surface course only. This equates to 450t of binder course materials and 2,250t of surface course.

FM Conway's end-to-end capability ensured the process was seamless. The company not only carried out all the planing and surfacing with its own equipment and operatives, but also supplied all the material from its asphalt plant in Erith, and delivered it using the company's haulage fleet. The same trucks



M2 CLOSURE



Above: The existing road surface was planed off to a depth of 50mm

"SURFACING GANGS WERE LAYING ASPHALT AT 160-200TPH"

Aiden Rhodes, FM Conway's aggregates & asphalt distribution manager, explains how the company geared up to supply materials for the M2 job.

1. What were the logistics of supplying materials 24/7 for a whole weekend?

This was a big undertaking due to the sheer volume of tonnage in and out, and the volume of vehicles needed. It involved co-ordinating vehicles from all our asphalt plants. The aggregates & asphalt division

had to organise the delivery and replenishment of over 4,000t of materials for the M2 alone – as well as other material requirements to the rest of the business.

2. Did you have to do anything differently than you would for a one night surfacing job?

We had to start the planning process 2-3 days earlier to ensure we had the right number of vehicles and the drivers were all inducted in the site rules and regulations. Distribution and transport staff were

on hand to confirm the correct drivers and vehicles were booked in, and the drivers all had the site rules issued to them on the night. We also ensured that extra points of contact were made available over the weekend.

3. How did you manage the haulage to make the most efficient use of the trucks?

Vehicles were brought in within certain time frames for the asphalt or planing. This enabled us to supply the material quickly and at regular intervals. It also gave us the

flexibility to use them again for a second round of planings or asphalt.

4. How much material went through the planers and the paving machine?

The two planers planed at a rate of 400tph between them. The surfacing gangs were laying asphalt at 160-200tph.



“What we achieved in 22 hours would probably have taken five nights of individual overnight closures”

also took the recovered planings to one of FM Conway's aggregate depots for recycling, with up to 66 lorries taking materials in and out of the site during the weekend closure.

The full weekend closure started late on the Friday night and, by using two planing machines in echelon, FM Conway finished all the planing by 8am the next morning. The new binder course also went down on the Friday night, and the surfacing team started laying surface course on the Saturday

morning. By 8pm that night the resurfacing was finished.

Paul Padfield, surfacing director at FM Conway, says: “What we achieved in 22 hours would probably have taken five nights of individual overnight closures. A full weekend closure definitely gives efficiencies from an operational point of view.”

He adds: “Continual working also means there are fewer day joints, resulting in better ride quality, and there are environmental benefits as a result of more efficient use of resources and reduced material wastage. You are also minimising hazardous activities – such as the installation and removal of traffic management – by a factor of five.”

Sean Coleman, Area 4 construction manager at A-one+, describes FM Conway's work as “seamless delivery”, and says that is “what we all strive for”. He adds: “Considering we gave you a short window to resource these works only adds to the achievement and reflects what the company is all about.”

Below: FM Conway's teams in action





VR TRAINING

FM Conway is introducing virtual reality (VR) training for fleet drivers. Another Set of Eyes (ANET360) uses VR headsets and a smartphone app to create a 360° video experience that effectively puts drivers into 'real' scenarios to understand what it is like to be a vulnerable road user. ANET360 was created by consultant FrancisKodak, which features in the 2019 Creative Industries Council's 'Ones to Watch' list. Dave Conway, road safety manager, says: "This innovative technology will ensure that road safety remains part of our DNA."

ASPHALT PLANT

Construction of our seventh asphalt plant in Newhaven, East Sussex is nearing completion. The Marini Top Tower 3000 will begin production of asphalt, including recycled asphalt, in December. The delivery of the Newhaven plant demonstrates cross-departmental collaboration, with consultancy, civil engineering, surfacing, water and drainage management and aggregate & asphalt divisions all involved. Mark Whelehan, head of projects, says: "It's great to see all our divisions and teams working hard to deliver this project."



AWARD WIN

Civil engineering apprentice Jared Humphries has won 2019 Apprentice of the Year at the Sevenoaks Town Partnership's Business Awards. The awards celebrate success in training and development across all industries, and we were delighted to see Jared on stage at the Knole Academy in Sevenoaks in September receiving his accolade. Jared has excelled in the apprentice programme, according to his mentor, principal engineer Wellington Takundwa: "Jared has been a revelation since joining our team, and he continues to excel well beyond the expectations of an apprentice."

NEW MD APPOINTED

— FM Conway welcomes Adam Green

FM Conway has welcomed Fellow of the Institution of Civil Engineers Adam Green to the business as our new managing director. Adam will oversee multiple divisions, including consultancy, civil engineering, structures, lighting, water and drainage management, traffic management and the drainage treatment plant. He brings over 30 years' experience in infrastructure, and a wealth of knowledge of government client organisations and industry expertise that will be channelled into benefiting the business for the future. Adam says: "I am delighted to be joining such a great business and look forward to supporting our future growth in the UK infrastructure market."



EMPLOYEE OF THE QUARTER

Jerry Banks
SHEQ Team



“A committed professional in the first instance. He is also a hardworking, caring individual who always steps up and does not shy away from the difficult questions and manages them with a relaxed personality.”

“His work ethic is of the highest level, often sacrificing his own time to meet tight deadlines. To summarise: professional, caring, and hardworking.”

TEAM OF THE QUARTER

Highways England M2
Carriageway Resurfacing Team



“This demonstrated teamwork at its best – great people doing great work.”

Those who contributed to this success are:

Simon Ditton	Darren Holmes
Neil Dibben	Lorna Turner
Steve Chapple	Craig Duvanna
Iskren Simeonov	Dave Boorman
Richard Illing	Aiden Rhodes
Richard Coughlin	Erith Asphalt Plant
Steve James	Andy Weymouth
Dominykas Lauraitis	Vilius Paulionka

Congratulations to the whole team.

NOMINEES

Congratulations to everyone who was nominated:

Tony Body
Colette Threfall
Krzysztof Drewek
George Nolan
Alnur Hassam
Clive Carter

Maggie Taylor
Leah Stevens
A40 Delivery Team
Colin Dear
Iskren Simonov
Danny Morris

Leanne Bennett
Paul Martin
Jon Cartledge
Dean Venter
Payroll Team

A JOB WELL DONE

Reported by
Member of the public

Supervisor
Mick John

Operatives involved
Rob Hecquet, Josh Worrall and Harry Sharp

Location:
Tennison Road, Croydon

Division:
Term Maintenance

“The team were really attentive to failures of the traffic controls; they were clean and tidy, worked tremendously hard, and the quality of the workmanship itself was second to none! In summary, the team that worked on the Tennison Road footway resurfacing deserve a pat on the back for a job well done, they were all a credit to your organisation.”

Reported by
Client

Supervisor
Tom Bett

Operatives involved
Team

Location
A27 Hammerpot

Division
Traffic Management

“I would like to pass on my appreciation and a huge thanks for everyone’s involvement regarding the A27 Hammerpot carriageway defect and their involvement from the initial call out, leading up to the repair and completion in the early hours of the morning. Thanks to all involved; the lads really pulled it out the bag on this emergency job and worked day and night with little notice to deliver.”

Reported by
Member of the public

Supervisor
Mike Coughlan

Operatives involved
Gezim Kola and Viorel Filip

Location
Ophir Terrace Junction Bellenden Road, SE15

Division
Term Maintenance

“I am compelled to express my gratitude and highlight the professionalism and fantastic conduct of two of your operatives working on the reinstatement of the paving outside our special needs school. Gezim Kola and Viorel Filip have been flexible and accommodating in their approach. Their work ethic is second to none. I am just amazed how much they have done and the quality of the works. They are a huge credit to your organisation.”



FM Conway Ltd
Conway House
Vestry Road
Sevenoaks
Kent
TN14 5EL

Tel: 01732 600 700

www.fmconway.co.uk