

Trunkline

The magazine for Woodside people | Q4 2020



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On the cover

Winning ways: The winners of the Chairman's Award and the CEO's Award were announced in Q4 as part of the annual Woodside Awards. Presented by Board member Frank Cooper and CEO Peter Coleman respectively, the awards went to the teams behind the Native Reforestation Project and Woodside's COVID-19 response.

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In 2020, we showed our resilience as we delivered strong production outcomes and maintained safe and reliable operations despite all the disruptions.

Now Woodside is progressing with confidence into 2021 as we work to deliver on our growth plans in Australia and internationally.

This issue of Trunkline contains examples of how the company is focusing on delivering value across both growth plans and operations.

It also acknowledges excellence across the business with the Woodside Awards, announced in December. An extraordinary CEO Award recognised the resilience our company showed through COVID-19, while the grand prize of the Chairman's Award highlighted work being done to set us up for the

future through the Greening Australia partnership.

Our organisation is also embracing change and working to transform our operations to ensure we remain competitive at a time of volatile prices and ongoing uncertainty around the global economy.

Cutting-edge innovations in both data technologies and core operations are aimed at delivering production efficiencies of 30% at our operating assets over the next 3 years, while also building new revenue streams.

And we are building our knowledge of new markets, including the growing hydrogen market in Korea, by partnering with key stakeholders.

Read on for more examples of how Woodside is progressing its future.

Notes on Petroleum Resource Estimates: All petroleum resource estimates in this publication are to be read in conjunction with the Reserves Statement in Woodside's most recent annual report, as updated by subsequent ASX announcements available at <https://www.woodside.com.au/resource-estimates>. This publication may contain forward-looking statements that are subject to risk factors associated with oil and gas businesses.

Some photographs in this edition were taken before physical distancing measures were introduced to manage the risk of exposure to COVID-19.

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Team Transformers: Senior Vice President Operations Fiona Hick, centre, with Operations Transformation General Manager Gordon Mathwin on her right and members of the team driving efficiency improvements.

Building on our strengths

Woodside's Operations Division is embracing new ways of working to stay competitive and make the most of the opportunities that will set the company up for the future.

One such opportunity was the signing in December of two milestone agreements allowing North West Shelf Project facilities to process other producers' gas for the first time.

And the company has also embarked on an Operations Transformation program, targeting a 30% efficiency improvement over the next three years.

"We will create a more cost-effective sustainable operation so we can thrive in the long term," explains Gordon Mathwin, General Manager Operations Transformation.

"We will achieve this by looking end-to-end at what we do, how we do it and what changes can make us more productive and enabled at work."

The program Gordon leads comprises a cross-functional team of Woodsiders from various fields including engineering, maintenance, operations and digital.

In November, Senior Vice President Operations Fiona Hick said the Operations Transformation team was "separate from the day-to-day running of the business, free to imagine and create a very different future".

She continued: "We have multiple

concurrent squads up and running right now, and they're pursuing high priority and high value opportunities using an 'Agile' approach, where we demonstrate rapid delivery of value, or we stop and we move to the next opportunity."

Changes arising from it will ensure Woodside continues to be a low-cost producer, setting the company up for the next wave of growth.

The December agreements allow processing of gas at Karratha Gas Plant from our Pluto fields as well as gas from the proposed Waitsia Gas Project Stage 2.

These developments align with the recently updated corporate strategy, which recognises that a highly profitable core business is the foundation of Woodside's success.

Linda Albano, Vice President Strategy Planning and Analysis, says the rapidly changing energy landscape and the shocks to the world economy in 2020 were key considerations in revising the strategy.

"Our revised strategy outlines how Woodside can build on our strengths, succeed in the energy transition and grow our business – all while progressing along our pathway to net zero carbon emissions by 2050," Linda notes.

We are already progressing along that pathway, announcing in November a near-term target of a 15% reduction in emissions by 2025 and a mid-term

target of a 30% reduction by 2030.

Senior Vice President Climate Tom Ridsdill-Smith says this builds on our existing emissions reduction programs including our commitment to offset Pluto's reservoir CO₂, and our 2016-2020 5% energy efficiency target.

"In the decade to 2020 through our collective efforts we've offset or avoided 2.28 million tonnes of net greenhouse emissions through our design out, operate out and offsetting approach," Tom reports.

He points out that designing out emissions in new and existing facilities where possible, potentially including carbon capture and storage, is always our first preference.

"Not only does it reduce emissions but can also cut costs and increase production of saleable gas," he notes, adding that efficient operating processes are also critical.

When Chief Executive Officer Peter Coleman announced in December his intention to retire in the second half of 2021, he reflected that Woodside was now not just resilient but also a confident company.

That confidence is showcased by the company's positioning for the future through a range of initiatives including the ambitious Operations Transformation, updated corporate strategy and emissions reduction targets.

Agility improves ability

There are more ways of becoming agile than completing star jumps or touching your toes.

Just ask somebody preparing to roll out Project Agility initiatives across Woodside over coming months.

“We sometimes feel that there are a few Woodsiders who think Project Agility is all about developing a new pre-start exercise program,” says Rebecca Murphy with a laugh.

Rebecca, an Agility Leader, is quick to correct any misapprehensions about the work she and others in her team are focused on.

“In corporate-speak, being agile means being adaptable in the face of an ever-changing business environment and building an organisation that thrives on change,” she explains.

“Project Agility’s goal is to ingrain a team mindset of better-every-day.”

The benefits of being agile have been around for some time and various elements have already been introduced into the company – concepts like collaboration, acceleration and rapid decision-making, for instance, are already employed by Woodside.

“But Project Agility aims to take it to a level higher by leveraging the benefits from new ways of managing performance assessment, fostering a continuous feedback culture, simplifying

and sharpening Woodside’s decision accountabilities, streamlining associated systems, process and tools and refreshing our culture/Compass,” says Richard van Lent, Senior Vice President Agility.

“The focus is very much on systematic change required to improve Woodside’s performance and culture.”

The spur for Project Agility was the 2019 employee engagement survey.

Staff indicated that while they enjoyed working at Woodside, improvements were desirable in performance management and decision effectiveness.

Long-time senior leader Robert Edwardes took the lead on the enablement project, tasked with identifying improved approaches in these areas.

The Project Agility team was established in July 2020 and includes six Agility leaders, each with the responsibility for a division of the company and work area.

Together with People and Global Capability (P&GC), the team has been examining what changes must occur for more agile work practices and to ensure the business is set up for future success.

Forty-five Agility agents provide a connection to the organisation to help test and rollout change and facilitate two-way feedback.

“These agents are instrumental to Agility’s success in making the changes we need at Woodside,” Richard says.

To date, Agility’s focus has been on improving performance management and reforms in this area were rolled out in September.

Key changes included sharper focus on feedback and development.

“The aim is to simplify the annual assessment of the performance of our employees, while also dedicating time to authentic coaching and regular feedback throughout the year,” explains Vice President P&GC Jacky Connolly.

“The changes recognise the valuable contribution of our workforce while still maintaining a level of performance differentiation.”

Next on Agility’s list (and the focus for 2021) is to clarify roles; to enhance Woodside’s framework for effective decision making; to continue to develop our organisation’s culture; and to ensure leaders have the right leadership skills and that future leaders are being developed.

Daniel Kalms, Senior Vice President Corporate and Legal, believes Agility’s work will improve Woodside’s ways of working and culture.

“We need to set Woodside up for a better and bright future – so get involved and play a role in making the change we need,” Daniel urges.



Ship shape: Through a raft of initiatives, Project Agility’s leaders and agents are driving a better-every-day mindset.

Turnaround triumph

Woodside has successfully completed dozens of maintenance turnarounds of varying size and complexity.

But the COVID-19 pandemic this year presented a myriad new challenges and opportunities in planning and executing the integrated North West Shelf Project turnaround program.

Typically, specialist contractors and vendors fly in from across Australia and overseas and are integral to the turnarounds' success.

Travel restrictions and WA's hard border limited the ability to access the same support.

So Woodside's turnaround team worked with key contractors to think outside the box to ensure the turnaround could proceed safely – and deliver on cost and schedule – with a predominantly WA workforce.

"Everyone involved, including our contractors, worked exceptionally well through a continually changing environment to deliver a best-in-class result," reports Turnaround Delivery Manager Scott Curedale.

"COVID-19 drove collaboration and a different way of working that we will be embedding into future turnarounds."

Scott continues: "I'm very proud of how resilient and professional the team were to deliver all planned activities ahead of schedule and under budget.

"And though there were about 1000

workers involved, there was only one medical treatment case throughout the entire program."

The onshore scope included overhauling five turbines at Karratha Gas Plant (KGP).

Normally, this would involve contractors being allocated specific turbines, often with limited collaboration between contractor teams.

This time, however, a "mixed teams" approach was adopted.

It was guided by a heat map that identified and matched key competencies, experience and other required attributes with the available workforce.

"This meant industry-experienced workers, regardless of which contractor they worked for, were matched with 'green hats' from local companies – those contractors who were new to the asset and often with experience outside oil and gas," explains Onshore Turnaround Superintendent Andy Grosse.

Andy says though this approach required an increased focus on supervision and planning, it enabled the work to be completed and delivered some unexpected but pleasing outcomes.

"It broke down some silos that have existed previously and led to better communications across teams and the sharing of ideas and experience," he explains.

Local companies that supported a turnaround for the first time gained valuable experience and benefited from

skills transfer by specialist vendors.

"There was excellent support and collaboration across the board from the asset and our contractors," Andy adds.

"And strong collaboration with the offshore campaign led to a revision of our onshore plans that enabled an additional cargo to be delivered."

The team implemented more than 20 cost-saving initiatives, from revising scopes to re-using parts that would normally be replaced.

These resulted in the onshore scope coming in significantly below the original forecast.

The North Rankin (NRA) and Goodwin Alpha (GWA) turnarounds were comparatively minor, with some scopes deferred to 2021.

But Offshore Turnaround Superintendent Jason Attard notes they still included several critical activities such as the pigging (the maintenance and clearing of a trunkline with a gauge or device) of Trunkline number one, along with turbine replacements on both NRA and GWA.

"Despite a disrupted lead-in, we were able to deliver our work safely and on time, which says a lot about the awesome support we received from everyone involved in both turnarounds," Jason notes.

Next year will see an increased level of offshore turnaround activity and Woodside is well advanced in planning for these campaigns.



Top marks: Despite the many challenges, resilience and innovation helped deliver a best-in-class result in this year's turnaround. Left, contractor Hayden Harrison verifying calibration data. Right, installing a new turbine rotor.



Scarborough fare: Scarborough Development team members look back on a roller coaster of a year and look forward with anticipation to 2021. From left, Nicolas Wirtz, Philip West, Henry Davies, Amy Rathmell, David Pisano and Shadah Orfinejad.

Scarborough's gift of time

The Scarborough Development has endured a roller coaster ride during 2020, but it emerged with a clear plan and in good shape to take advantage of valuable work completed during a challenging year.

Kimberly Walpot, Development Manager for Scarborough, notes that the project target final investment decision (FID) was deferred to the second half of 2021, slowing project activities and requiring a reduction in budget and team size.

"Even though 2020 has been challenging, we have not missed a beat," Kimberly says.

"But the ride is not over yet and we're preparing for a busy 2021 so do not unbuckle your seat belt."

The revised schedule has enabled investigations into how to increase production to take advantage of the results of last year's reservoir modelling studies.

Those results demonstrated that Scarborough's hydrocarbon reserves were 52% higher than previously estimated (Trunkline Q4 2019).

"FID target deferral has allowed us the opportunity for both the upstream and downstream teams to systematically review and optimise the project to accelerate gas production to shore," says Scarborough

Development Lead David Pisano.

"It's been the gift of time and time used well."

Feasibility studies in 2020 demonstrated that the upstream development design could accommodate an increase in production capacity from 6.5 Million tonnes per annum (Mtpa) to 8 Mtpa with only a few design modifications.

Scarborough Project Manager Morgan Harland says the changes are in four main areas.

The first optimisation was increasing the diameter of the export trunkline over a 200 km-long section, reducing pressure losses to accommodate higher rates of production.

Secondly, accelerating the drilling of two wells from Phase 2 into Phase 1 could provide the well deliverability necessary to utilise the additional trunkline capacity.

Thirdly, debottlenecking key components of the topsides processing equipment on the floating production unit (FPU), which acts as an export compression platform, could provide more power so the increased volume of gas can be efficiently transported to the beach.

Finally, changes required at the expanded Pluto LNG plant are being

assessed to enable the processing of this additional feed gas with an opportunity to send some gas via the Pluto-Karratha Gas Plant (KGP) Interconnector pipeline to KGP.

Vice President Pluto Expansion Paul Baker and his team also made the most of 2020.

Bechtel (Western Australia) Pty Ltd was selected as the engineering procurement and construction contractor for Pluto LNG Train 2, which is intended to process approximately 5 Mtpa of Scarborough gas.

"We've been working with Bechtel to optimise Train 2 and deliver a higher value product to the Scarborough Business Unit," says Paul.

"The collaboration between our teams sets us up for success in the future."

Senior Vice President Scarborough Mike Robinson was upbeat in an end-of-year message for his Scarborough team, but reminded the team that 2021 will be important as they progress towards FID.

"The results will continue to come as long as we maintain the same positive mindset and behaviours we've shown in 2020 – pro-actively engaging with all stakeholders, as well as working as a team to face and overcome the challenges that are presented to us on a daily basis," Mike says.



Celebrating **success**

Woodsiders continued to innovate, accelerate and collaborate their way to new successes during a difficult year and the best of those efforts were acknowledged in the 2020 Woodside Awards.

“This year has stretched us all and today we celebrate that despite all the disruption, our people have achieved amazing things,” our Chief Executive Officer Peter Coleman declared at the awards ceremony, held at Mia Yellagonga in December.

Seventy-five entries were received across the five award categories – Base Business Excellence and Value; Culture and Inclusion; Innovation; Resilience; and Sustainable Outcomes.

Resilience was a new category and added in light of the year’s unprecedented challenges.

The **Chairman’s Award** went to the **Native Reforestation Project Phase 1**.

It was presented by Frank Cooper, a member of the Woodside Board who was representing the Chairman, Richard Goyder.

The Native Reforestation Project is a partnership with Greening Australia, an environmental enterprise with more than 37 years’ experience in

conservation and restoration, to plant trees on farmland in the Great Southern region of Western Australia (see Trunkline Q3 2020).

The partnership has screened and acquired 6600 hectares (ha) of degraded farms and planted and direct-seeded approximately 2200 ha of high-quality native vegetation.

In response to the challenges of 2020, an extraordinary **CEO Award** was introduced this year and was awarded to the team leading **Woodside’s COVID-19 response**.

The judges had observed that the winning entry represented dozens of submissions outlining Woodside’s agile and determined response to the disruptions of the pandemic.

“This award recognises the efforts of many,” Peter said.

“There was a lot we didn’t know as the crisis escalated, but I did know we had the right people and processes in place to get through it.”

The Chairman and CEO both expressed thanks to the judges, who had the difficult task of picking the winner from a diverse and impressive array of entries.

The finalists gifted a total of \$69,000 to charities.

The category winners were:

Resilience: Overcoming the LAV02 Sand Screen Failure.

The Laverda 2 well (LAV02) is part of the Greater Enfield Project off the WA coast. The well produced sand into the 28 km subsea system before it was isolated.

The sand needed to be removed from the topside equipment and flowlines. The team was able to successfully sidetrack and restart the LAV02 back to the Ngujima-Yin floating production storage and offtake (FPSO) facility within just 10 months.

Innovation: Karratha Gas Plant’s (KGP): Innovating for the Future.

KGP has taken action to expand a suite of capabilities to process third-party gas.

Multidisciplinary collaboration and innovation led to Process Engineering producing data on operating conditions and fluid composition that was used by production chemistry to calculate the effect of oxygen on corrosion rate in a hydrocarbon stream (believed to be a world-first).

The team rose to a new technical and contractual challenge by cooperating, collaborating and innovating to deliver a successful outcome.



Winning smiles: Clockwise from opposite page, the Myanmar A-6 Development team collected the Sustainable Outcomes award; a template to audit culture and wellbeing on rigs delivered the Culture and Inclusion award; the Resilience category was won by the team which overcame the sand screen failure of Laverda 2 well; new technology helped deliver the Base Business Excellence and Value award; and expanding Karratha Gas Plant's capabilities topped the Innovation category.

Sustainable Outcomes: Myanmar A-6 Development – Negotiation of Amended Fiscal Framework

Woodside successfully completed negotiations and executed two agreements that amend the fiscal framework associated with the offshore Myanmar A-6 gas discoveries.

The new fiscal framework changed the commercial outlook. This project is now well-placed to deliver significant value to Woodside, while commercialising Myanmar's first deep-water resource.

"We're seeing the fruits of investing in technology across the business and how this is being applied to solving business problems and preparing us for the future," stated the judging panel.

Base Business Excellence and Value: North West Shelf Optimiser – Integrating Onshore and Offshore Control for Maximum Production.

In 2020, a new technology was applied to bring our production optimisation to an even greater level.

The Process Control team has utilised a new technology – an Advanced Process Control (APC) optimiser – to continuously optimise between the North Rankin Complex, Goodwyn Alpha and Karratha Gas Plant APC applications.

The optimiser is now being further enhanced to maximise production while managing nitrogen constraints across the North West Shelf Project assets.

Culture and Inclusion: Managing Rig Operations – Culture Readiness and Wellbeing.

On each campaign Woodside has partnered with the Transocean DDKG2 (the sixth-generation, dynamically, positioned, ultra-deepwater drill ship). We improved our understanding of how multi-cultural and gender diverse human factors impact rig safety and operational performance while considering what more we could be doing for each drilling vessel.

A Woodside graduate and an experienced operator worked together

to address shortfalls identified in previous campaigns, creating a template to audit cultural readiness and wellbeing on rigs.

The 2020 Woodside Awards demonstrated the depth and breadth of innovation and collaboration across the business.

As the judges in one category commented: "The judging process is almost heartbreaking. You really want all these excellent submissions to win. These submissions make you proud to be a Woodsider."





Water everywhere: Left, Henk-Jan Bakkenes of Heerema Marine Contractors was on deck as the water handling unit was lifted on to the Pluto platform (PLA); right, the 1700 tonne unit safely installed.

Midnight mission to Pluto

As Pluto's reservoirs mature, the gas extracted could comprise increasing amounts of water, as is the case with most hydrocarbon reservoirs.

That proportion will soon require the services of a dedicated water handling unit to handle the "wet gas".

One such unit was safely delivered in November – in the middle of the night when ocean conditions were considered optimal, and after simulations were conducted in The Netherlands.

It took only three hours for the vessel carrying the unit to enter the 500m exclusion zone surrounding the Pluto platform (PLA), unload the module and then depart the exclusion zone; but it was the result of more than four years' meticulous work.

"It's a significant milestone in the life of Pluto LNG," says Project Manager Andy Angus, who watched the procedure 1200 km away in the Pluto Remote Operations Centre at Mia Yellagonga, Perth.

"It was only possible thanks to the tremendous collaboration across Woodside – including Projects, Engineering, Subsea, Operations Readiness, Pluto Asset, Logistics, Contracting and Procurement and others – as well as with contractors."

The platform, constructed in Malaysia, was scheduled to be delivered months earlier, but COVID-19 put paid to those plans.

Indeed, the pandemic created numerous challenges in finishing, testing and delivering the module. But each and every hurdle was overcome thanks to the creativity of the teams involved and their teamwork, Andy says.

"These events continued to highlight the resilience everyone has shown over an extended period to deliver the project to this stage," he notes.

The end result is a complex hydrocarbon processing unit.

To illustrate its size, at 1700 tonnes it's about half the size of the topside on PLA.

It will separate the oil and water, treat the water and return it to the sea.

Constant monitoring will ensure it meets strict environmental requirements. From the hydrocarbon stream it can separate and process up to 22,000 barrels of water a day.

Working with the vendor the Operations Readiness and Health and Safety personnel developed a new lifting tool to simplify the replacement of the filters, minimising the human

factors impact (see Trunkline Q3 2019).

Due to increased demands, the module includes three new power generators which should improve reliability over the existing system. And because the main engine is gas driven, emissions will be lower than the previous diesel machines.

To date the project, delivered through the Integrated Projects Program (IPP), has spanned more than 1.7 million hours without an injury across the various work locations since concept definition work began in August 2016.

With the module now landed, the team is focused on the remaining scope including hook-up of the connecting piping spools, cabling, stairs and infill panels along with download and testing of the new control system and commissioning of the new electrical generation and distribution system.

Mike Price, Vice President Pluto, FPSOs (floating production storage and offloading facilities) and Wheatstone, congratulated all responsible for the water handling unit.

"There has been great collaborative work by multiple teams to achieve this major milestone in this important project to ensure we maximise gas recovery from the Pluto fields," Mike notes.

Cores for celebration

Woodside has taken an industry-leading leap forward in efforts to deliver seismic data to the desktop.

Using hyperscale cloud computing, we were able to deliver within hours results that would normally take weeks.

To appreciate the size of this extraordinary breakthrough, you would need a 4.2 km-high stack of ordinary laptops.

Those laptops would deliver the equivalent of one million virtual central processing units (vCPUs) – the same number that Woodside, with the help of Amazon Web Services (AWS) infrastructure, used to achieve its feat.

It was a truly global effort in which Woodside's Subsurface Technology team, supported by AWS staff in Perth, executed the workload across three separate AWS data centres in the United States. The software used was developed via our long-standing relationship with S-Cube, a tech start-up spun out from London's Imperial College.

The “brain” of a central processing unit (CPU) is called a core and the million-core milestone was reached in late November after careful preparation that included long days in the office setting up, testing, validating and monitoring

the stability of the algorithm as it scaled up to 1.1 million cores.

Once at scale, each iteration of seismic data processing took only 90 minutes to complete, well ahead of the usual 10 days it would take using Woodside's supercomputer Moordiup.

AWS Vice President Bill Vass later described Woodside as one of the world's leading innovators. “Woodside is the first energy company to reach this scale,” he noted.

In fact, Woodside is one of only a handful of companies in the world to simultaneously use more than one million vCPUs via AWS infrastructure.

All that computing power enabled the subsurface team to take a novel approach to full-waveform inversion using 3200 km² of 3D seismic data from the Greater Sunrise gas field. That's an area roughly 70 km long and 45 km wide, containing data from more than 4 km below the surface.

The complex geology of the Greater Sunrise region, which is located offshore Timor-Leste, requires new technologies to better understand its subsurface properties. Previously, this computationally demanding method would have been considered unaffordable.

Woodside's Executive Vice President Shaun Gregory says it's a great example of how working collaboratively across our business and with our partners can enhance value and productivity.

“Being able to get seismic results in hours – about 150 times faster – means that we can be decision-ready sooner,” Shaun notes.

The achievement builds on a challenge set by Shaun three years ago when he asked our subsurface and digital teams to see whether they could reduce the time it took to process seismic data from weeks to days.

And it was made possible because of the long-term collaboration with S-Cube to develop cutting-edge FWI algorithms and our well-established relationship with AWS, with which we formed a strategic cloud provider partnership in early 2020.

The work, which informs the subsurface technology team's Advanced Imaging project, was supported by staff from the Geoscience, Digital and Sunrise teams.

Subsurface Technology Program Manager Darryl Harris says it opens the way for game-changing improvements.

“What we've learnt from this project will enable significant acceleration and cost reduction for FWI projects going forward,” Darryl says.



Dynamic data: Subsurface technology team members delivered seismic data results within hours rather than the usual weeks.



Washer work: Left: System Engineer Henry Smith helped design a new ingress protection (IP) washer; right, Maintenance Coordinator Bruce Hill with new split IP washers at Pluto LNG plant.

Sealing the deal

When Henry Smith and Tim Byrne were reviewing a hazardous area equipment inspection at Pluto LNG in 2018, they came across an all-too-common problem: a degraded ingress protection (IP) washer on an instrumentation junction box.

“IP washers are weather seals,” explains Henry, a System Engineer.

“Their job is to keep out moisture and water and they’re attached to a gland or electric cable entry of various types of electrical equipment.”

Usually made from nylon or neoprene, these humble IP washers are used in practically every industry worldwide.

Hundreds of thousands are installed at Woodside; they’re cheap to buy, but replacing them triggers a tsunami of procedures and work, costing resources and time.

Equipment might need to be isolated, cables pulled out and other components might need replacing.

Moreover, a notification must be raised, leading to a review, prioritising, approving, scheduling, generating permits and work orders, isolating systems and reviewing afterwards.

“We’ve documented the old way of isolating and disassembling a washer, and what should be a simple repair can turn into a long-winded affair that touches 10 people before completion,”

concludes Darren Shanahan, Production Program Manager in Technology.

“When it involves an instrumentation junction box, it has extra challenges because they’re tied into production and it’s difficult to isolate them for that reason.”

Henry and Tim’s brainstorming for a solution landed on Darren’s desk. Many months of trials, testing and more brainstorming was to follow.

A three-day deep-dive workshop was held in Mia Yellagonga in April 2019 involving vendors, a patent lawyer, joint venture partners and potential manufacturers.

They dissected the problem of retrofitting an IP washer: how far can you open the joint ever so slightly without damaging the joint and without switching it off?

Seven potential solutions were generated, and a one-piece flexible washer was determined the best; now, one had to be designed that gave adequate ingress protection.

“We had to find a material that was both flexible enough to snap around a cable joint, rigid enough to give integrity to the seal, but also impressionable enough to deform under pressure to create a seal,” reports Darren.

“We needed to find the right material for the right design and one that would

work between minus 60 degrees to plus 90 degrees Celsius.”

Minus 60 degrees?

“We always thought we could commercialise any solution and so we needed global application,” he replies.

Trial after trial failed, but learnings accrued until a 3mm thick washer with a “lock” and made from a material used in an automotive seal passed every test.

That washer is out for site trials at Karratha Gas Plant, Pluto and offshore.

“We’ve worked with electrical and maintenance technicians and done a management of change,” Darren reports.

Washers are now replaced under a new philosophy of Find and Fix (the term coined for using the coating Humidur in the corrosion war, see Trunkline Q3 2018) to denote a policy of immediate fixing in suitable circumstances.

Another washer, with a concentric wrap, has been invented so two patents have been taken out in Woodsiders’ names.

“Any industry that uses cables with glands suffers deterioration of IP washers and this is an online rapid retrofit solution,” Darren points out.

“It’s all about productivity and efficiency.”

New point of view

Coronavirus has created huge challenges, but the pandemic has also accelerated more efficient ways of working.

Production Technology Site Lead Lionel Pierson believes COVID-19 has prompted Woodsiders to cut back on non-essential activities and innovate to achieve required results.

“For example, getting specialists, vendors or our engineers to physically inspect or interact with equipment has historically been a resource-intensive process,” Lionel explains.

“There’s the cost and time required for flights and inductions, elevated risks due to helicopter transportation offshore, accommodation costs for overnight stays – the list goes on.”

The travel and site restrictions prompted by COVID-19 have challenged Woodside’s Digital and Technology teams to deliver new tools to our sites, and much faster than would be normally expected.

“The aim is to allow front-line personnel to live-stream their point of view direct to an online meeting room, and to join in meetings via mixed reality headsets,” explains Sankar Thiagarajan, Digital Field Mobility Lead.

“This technology now allows us to extend our meeting room to any part of the plant where there is a strong WIFI/4G signal.

“We can now safely hear and see, direct from live areas of site, and have a live discussion between someone in the field and someone in any location.

“This is a step forward to the new normal. Live support delivered remotely paves the way towards greater connectivity.”

The result is real-time collaboration between parties who would normally rely on slower communications like emails and desk phones.

Technology Commercialisation Manager Alison Barnes believes energy companies can better leverage technology to achieve outstanding operating outcomes.

“Smartphones have enabled the world to be virtually connected, but our strict hazardous area requirements put an additional challenge on introducing new technology at our sites,” Alison points out.

“It’s vital we are open to doing things differently and continually trying different solutions.”

Stand-alone intrinsically safe (IS) cameras have been used on site for many years, but our teams are now focusing on integrating live-streaming and interactive option to connect the field to online meeting rooms.

Sankar and his team have been trialling multiple options, with an exciting front-

runner mixed-reality device being used in the KLE 231 project which addresses increasing risk from the aging electrical distribution equipment through refurbishment and replacement at Karratha Gas Plant.

Claudia De Los Rios, Graduate Digital Analyst, has been testing video-calling solutions and reports the initial feedback is that the device is intuitive and will be easy to use without extensive training.

A mixed-reality device is a head-mounted computer with a transparent visor in front of the wearer’s eyes that projects digital imagery on to their surrounds.

Brownfields Graduate Project Engineer Ciaran Doyle says: “In a world where physical distancing is the new norm, the ability to have interactive experience with our maintenance personnel during commissioning support – to see what they can see, send them information – has been incredibly powerful.”

Intelligent Systems Manager Ben Wilkinson says: “As we seek to create value through digitisation, it is more important than ever to seek ways to create human-centric experiences.

“The remote assistance solution is a great example of how technology can better connect people – no matter where they work.”



In focus: Lionel Pierson, Sankar Thiagarajan and Claudia De Los Rios discuss how mixed reality headsets can help deliver outstanding operating outcomes.



New direction: Korea Country Manager and Chief Representative Sandra Park visits a Korean hydrogen refuelling station, built by a consortium that includes Woodside.

Hydrogen fuels demand for stations

The HyNet consortium, which includes Woodside, passed an important milestone in the second half of 2020 with the opening of its first hydrogen refuelling station in Korea.

HyNet (or the Hydrogen Energy Network Co. Ltd.) is a Special Purpose Company that aims to deliver 100 such vehicle refuelling stations in Korea by 2022.

The first five stations built by HyNet successfully opened between August and October at locations across the country.

Korea Country Manager and Chief Representative Sandra Park has visited some of the stations and spoken with drivers of hydrogen fuel-cell vehicles (FCEVs).

She says feedback has been encouraging.

“Drivers are very satisfied with the performance of their vehicles,” Sandra reports.

“They are pleasantly surprised by the running costs and proud to be improving air quality. Their only request is for more stations.”

This demand for more hydrogen refuelling stations is the result of a strong push by the Korean Government to establish a hydrogen economy.

Earlier this year, the Government set targets of 200,000 hydrogen vehicles and 450 hydrogen refuelling facilities by 2025.

These ambitious numbers are a big step up from the approximately 10,000 vehicles and 50 refuelling stations in Korea today, and one of the reasons that Korea is a focus for Woodside's New Energy team.

“The government is stimulating a hydrogen market in Korea,” says Owen Davis, a member of that team.

“We have a successful history and great relationships in Korea. It's one of our focus markets and HyNet plays an important role.”

The ambitious government targets, and the presence of world-leading hydrogen technology providers, is leading to strong customer demand and rapid growth in hydrogen vehicle numbers in Korea.

HyNet is working to address the resulting need for more refuelling stations.

Woodside's investment into HyNet provides valuable opportunities for the company to work alongside 12 other companies (including KOGAS and Hyundai Motor Company) that are leading the hydrogen economy in Korea and beyond.

Moreover, it allows us the opportunity to gain insights into demand growth in the Korean market.

Owen says Woodside is the only non-Korean resource participant in HyNet.

“Our investment in HyNet has demonstrated Woodside's strong initiative and dedication for a Korean hydrogen market and to explore options for low-carbon energy,” he explains.

Sandra notes: “It's been a team effort to get us to this point.

“We look forward to continuing to build our position in Korea and making a difference through our investment in HyNet.”

Standing together in 2020

Every October, Woodside comes together for a health, safety and environment campaign called We Stand Together for a Perfect HSE Day.

This year's campaign showcased activities and events built around the theme "Taking Action: Our Behaviours Matter".

"In a challenging year, this theme was a timely reminder of the message that, irrespective of our role or location in the organisation, we are all connected and that individual actions make a collective difference," says Debbie Morrow, Vice President Health, Safety and Environment.

In addition to a catalogue of organisation-wide events, teams across the business organised innovative, engaging and fun activities to mark We Stand Together 2020.

Non-site-based employees were given the opportunity to visit the Australian Centre for Energy and Process Training and ERGT Australia, which runs safety training courses. They experienced demonstrations of the process and risks associated with gas production, including a fire simulating a loss of containment on site.

Graduate Process Safety Engineer Su Ching Khong was one who attended.

"It's important that people in corporate roles understand the link between what

they do and how that can introduce risks that impact our frontline," Su Ching says.

The Wellbeing Wheel was also a prominent feature across We Stand Together events – no surprise, perhaps, in a year of challenges and significant change.

"The Wellbeing Wheel helps us to bring balance to our personal wellbeing and start important conversations about mental health and wellbeing with our workmates," explains Debbie.

The Integrated Projects Program team was one which employed the Wellbeing Wheel in an interactive showcase.

Health and Safety Adviser Kim Thomson continues: "Each station was championed by one of the leadership team who personalised a story to share, told a joke and discussed values and mindfulness or the importance of our biological needs.

"A standout of the event was a Laughing-Yoga session championed by Project Engineer Joy Pan."

The Logistics function used the Wellbeing Wheel as the basis of an Amazing Race-themed competition, whereby each challenge promoted discussion about the wheel's elements.

Logistics Superintendent Steve Lindsay says it is a "timely exercise to perform a self-assessment and discuss ways we

can all find that balance to ensure your best 'you' is always at work and home".

At Karratha Gas Plant, Storage and Loading Maintenance Planner Karen O'Neill describes the session as "a complete standout".

"Congratulations to the team who delivered a creative, interactive and compelling program this year," Karen says.

"I particularly enjoyed the process safety virtual reality activity. What a great way to illustrate the perception of risk and to challenge people to choose different points of view."

Offshore teams were involved, too, with many holding engaging and successful activities around lessons from the past, survival crafts and discussions about the wellbeing wheel.

Performance and Engagement Lead Dana Budzinski managed the development and roll-out of organisation-wide events for the campaign.

"The enthusiasm of our people ensured that this year's We Stand Together for a Perfect HSE Day campaign was a great success," Dana reports.

Debbie agrees, and concludes: "The HSE team wishes everyone a safe holiday period and we will come together in January for a Start Strong campaign intended to set us up for a successful 2021."



Safe hands: Left, the Okha team mark this year's We Stand Together 2020 campaign, while, right, Todd Dicker and Sonjica Rajkovic promote safety on Goodwyn A platform.



A day in the life of a ... Workplace and Facility Services Coordinator

On any week day, around 3000 Woodsiders and contractors are hard at work in Mia Yellagonga, the company's Perth headquarters. It's a population comparable in size to a small country town.

And there's a team which ensure it all runs smoothly. The Global Property and Facility Services (GP&FS) function is responsible for delivering dynamic, connected and energised workplace solutions.

But it doesn't end with Mia Yellagonga.

"The responsibility of GP&FS is to manage our global portfolio and coordinate workplace and facility services wherever Woodsiders are located around the world," explains Lauren Jacques, Workplace and Facility Services Coordinator.

"We ensure the effective coordination and efficient running of services to enable smooth operation, whether it's in Perth or Karratha, Myanmar, Senegal or in London.

"We have the task of ensuring our buildings function in accordance with what the company needs, the laws and bylaws which regulate our use, and with the buildings' owners to ensure they're informed about our occupancy and building use."

Of course, the COVID-19 pandemic has magnified the focus on Lauren's function and its role in ensuring buildings such as Mia Yellagonga operate in a safe manner.

"In the light of social distancing guidelines, we've had to examine the way everything is done," says Lauren.

"From The Shelf cafeteria to The Wellness Centre, the lifts to meeting rooms, Level 3 access for visitors – all activities have had to be examined to ensure the protection of staff and visitors is paramount."

It's meant a busy time for Lauren's entire team, but one she's been well prepared for.

Lauren started her career in property with a real estate company in 2010.

She became involved in property management, and then property sales, liaising with external stakeholders as she managed property portfolios.

In 2016, she joined Woodside, attracted by the opportunity to grow and enhance her career.

"At Woodside I am responsible for the day-to-day running and efficient operation of the MY campus, allowing occupants to carry out their core business," she says.

"This includes liaison with the onsite facilities management team, managing and coordinating repairs, maintenance and service work for the campus, as well as the development and implementation of asset and risk management strategies for the building."

Lauren is also responsible for events management at MY, which requires her to collaborate with both internal



Working for workplaces: Clockwise from opposite page, Workplace and Facility Services Coordinator Lauren Jacques enjoys a catch-up with her mentor Debbie Morrow; regular meetings with colleagues ensure the team is aligned and supported; Lauren's role entails the day-to-day running of the Mia Yellagonga campus in Perth.

and external stakeholders to ensure the successful delivery of events and functions.

The MY gym is an area of the campus Lauren is particularly familiar with.

"I am passionate about my health and wellbeing and regularly attend my local gym and the onsite gym available to Woodside employees," she reports.

"It's fantastic to work for a company like Woodside that has wellness as a central focus. Not only does it promote right spacing, but the company also encourages you to utilise the facilities that are available to maximise your productivity."

Below is a typical day in Lauren's working life:

5am: My day starts early with a visit to my local gym, which I find sets me up for a productive and rewarding day. I then take my pug Wally for a walk, getting some fresh air before starting my commute into work.

8am: First on the agenda is a contract meeting with one of the many contracting partners our team manages. This one involves day-to-day contractual items to ensure deliverables are met to support business operations. I am involved in contract meetings with caterers, facilities management, cleaners and security. These contracting partners assist with providing services within MY that support daily operations.

10am: I review the events schedule for the coming week and month to ensure that the coordination of all event requirements is met. This involves ensuring spaces and room requirements including IT resources and installations are reserved and liaising with internal and external catering and security contractors to ensure all needs are met and delivered above business expectations. This review allows me to forward plan and connect with relevant individuals to ensure their business needs are met so the event runs successfully.

11am: Maintenance meeting with CBRE. CBRE is the landlord's representative and we regularly meet to discuss everything from the carpark to Christmas decorations. We both share the same objective of ensuring the building is used safely and efficiently, so the meetings are invariably cordial and productive.

12pm: At lunch I head down to the gym to take a class, have a personal training session or enjoy a solo session. Besides the exercise this is when I connect with friends and re-energise my mind and body for the rest of the day.

2pm: I meet with Debbie Morrow. Debbie is Vice President Health, Safety and Environment and is my mentor. I find her advice and guidance fantastic and very useful.

3pm: GP&FS Team Meeting. We usually hold this team meeting fortnightly, sometimes more frequently. It is a great



opportunity to catch up with my team members in Perth and Karratha and find out what challenges have been tackled and what new work is on the horizon. This ensures the team is aligned and supported. Discussions can range from Karratha site operations to issues concerning global properties and their leasing, and of course keeping health, safety and environment management front of mind as a priority.

4.30pm: A final check of emails to ensure nothing urgent has come in at the last minute before I pack up for the day and start my commute back home. Once I arrive, my fiancé and I take Wally for another walk and reflect on another eventful day at work – and because every day tends to be different, there's always something to talk about.



Student engagement: Clockwise from top left, Callum Burnett, far left, and Daniel Hackwill, far right, networking with students on the Indigenous Australian Engineering Schools (IAES) program at Curtin University; the program gives 25 Indigenous students the opportunity to catch a glimpse of what is possible for their careers; at a reception at Government House ballroom, Perth, with WA Governor Kim Beazley.

Engineers' STEM sell

A group of West Australian Indigenous secondary students interested in studying engineering engaged with Woodside engineers during the October school holidays to participate in “story-telling” sessions.

Run by Engineering Aid Australia (EAA), the Indigenous Australian Engineering Schools (IAES) program gives 25 Indigenous students the opportunity to spend a week at Curtin University and catch a glimpse of what is possible for their futures and careers.

This was the third consecutive year Woodside has sponsored the program.

The cohort included students from across WA, including Kununurra, Broome, Port Hedland, Karratha, Geraldton, Bunbury, Denmark, Mt Barker, Albany and Perth.

More than half were female.

Process Control Engineer Lucy Barton hopes that by sharing her journey on becoming a chemical engineer, including talking on the interesting projects she has been involved with since joining Woodside and the locations where she has worked, she can help inspire the next generation of young engineers.

“They were all very engaged and asked a lot of questions – especially around what it’s like to be a female engineer,” Lucy reports.

“I also spoke about projects Woodside works on, domestic gas and how Woodside and engineering impacts all West Australian communities.”

Students with a strong interest in STEM (science, technology, engineering and maths) subjects and who are thought to have the interest and capacity to continue on to tertiary education in engineering fields are nominated by

their schools for the IAES program.

IAES also invites 10 previous participants back to the school to act as mentors for the students.

In Perth, the students get to experience life on a university campus and undertake field trips to various industries in and around the metropolitan area.

“Unfortunately, we were unable to bring such a large group into Mia Yellagonga this year due to COVID-19 restrictions,” says Engineering Capability Manager Daniel Hackwill.

“But the story-telling sessions were a fantastic way to engage.

“Callum Burnett from People and Global Capability and I were also able to participate in an industry networking expo at Curtin to talk to the students about future opportunities in Woodside – an invaluable opportunity for us going forward.”

At the conclusion of IAES week, Daniel and Graduate Process Engineer Jackson Pickering also attended the IAES Vice Regal Reception at Government House ballroom, where the students were presented to WA Governor Kim Beazley.

“The students made many connections from the engineering activities during the week, and this was a spectacular evening to conclude on. It allowed for a lot of interaction with the students which will hopefully inspire many future engineers,” says Daniel.

This is the 11th year Curtin University has hosted the IAES program and Woodside will sponsor it again in 2021.



Learning outside school

The Drilling and Completions (D&C) function has enabled eight Year 10 schoolgirls to learn more about science, technology, engineering and maths (STEM) subjects while also gaining experience at Mia Yellagonga.

One of the organisers of the STEM work experience program, Graduate Completion Engineer Lauren Malaxos, says the aim was to inspire girls to consider how a STEM career might fit into their future career plans, and to show them what real-world applications of science and maths looks like.

The program was coordinated by Lauren, Graduate Drilling Engineer Sarah Lattimer and Manager Technical Elizabeth Sammut.

"Most of us can all point to an experience during our high school years that was monumental in shaping our decision to study engineering," says Lauren.

"There are so many misconceptions amongst young girls as to what an engineer actually does, and we really wanted to show these girls how exciting and enjoyable STEM-based roles can be."

The idea was conceived after receiving an inquiry for work experience. That was developed to create a multi-faceted, semi-structured program comprising a combination of learning, doing and interacting.

The students came from three Perth girls schools.

More than 25 Woodsiders helped from various functions and skillpools including D&C, Geoscience, Reservoir Management, Subsea and Pipelines, Operations, Engineering, Robotics and People and Global Capability.

Held over three days in September, activities included informative presentations and technical seminars from different functions; a tour of the robotics laboratory; exploring Woodside facilities using virtual reality goggles; and shadowing an engineer, working one-on-one to help with real engineering problems.

The girls also heard from some of our young engineers about their own transitions through education into Woodside.

Sarah says that the range of activities was aimed at showcasing how STEM careers require elements of creativity, problem solving, teamwork and communication.

"This style of workplace learning helps students develop an understanding of STEM disciplines, exposing them to a wide range of careers and helping to foster interest in areas they were previously unaware of," she notes.

Afterwards, the students commented that they understood more about what engineering jobs looked like and that they were giving more consideration to a STEM career than they previously had.

Many added they learned about careers they didn't even know existed, and would appreciate more similar programs.

"My three days at Woodside taught me more than school could ever show me," one wrote in her feedback.

Gary Jones, Vice President D&C, says the program was a testament to the hard work of those who had designed and presented it.

"Having first-hand access to experienced people and their learnings can be hugely influential for young people who will benefit enormously from good role models," Gary enthuses.

"If this program has a positive impact on one or more of these students, it will have been well worthwhile."

Organisers hope similar programs will be held in coming years to play a role in developing the next generation of STEM-qualified individuals.



School's out: Top, the Year 10 students at Woodside's robotics laboratory at Karda; below, Gary Jones, Elizabeth Sammut, Lauren Malaxos and Sarah Lattimer helped organise the students' program.



Safe and sound: Richard Wardrobe, Michael Harwood, Julie Considine and Neil Richards were charged with making company information easily accessible but still secure.

Managing information better

Any idea of the volume of information (reports, presentations, spreadsheets, etc) generated at Woodside since the company was founded in 1954?

To give some idea, Woodside currently generates approximately five million documents every year.

An annual stack of documents would reach about 500m into the sky – almost four times higher than Woodside's Karalak building in Perth.

Of course, these days documents are almost entirely electronic, but in previous years they were either hard copy, electronic or a mixture of the two.

Whatever the form, information needs to be stored securely and safely.

After all, it might hold significant value in terms of commercial and contractual agreements, intellectual property and production data, which provide Woodside with a competitive edge in our industry.

It also needs to be easily accessible to the right people and easy to share to enable collaboration, so its value is realised.

"Great work starts with great teamwork, and for that we need easy access to reliable information," says Richard Wardrobe, Content and Productivity Services Manager in Digital.

Enter Woodside Information Lifecycle Management (ILM).

ILM is a set of simplified processes and tools designed to help the company work collaboratively and leverage opportunities presented by digitalisation.

Data Science Manager Neil Richards reports that the previous information management governance system was complex and prescriptive.

"The red tape made it difficult to quickly adapt to improvements in processes and systems," Neil reports. "It resulted in numerous deviations regularly being implemented across the business."

Over the past year, the team has revitalised the company's information management framework.

"We have simplified the rules, reduced the volume of procedures and guidelines by 60% and provided user-friendly interactive tools for assistance," Neil reports.

One of the key changes in the new ILM framework is a focus on access to information.

Julie Considine, Content and Productivity Services Lead, explains: "We are driving a change in our company culture so information is 'open by default'.

"This requires a shift in thinking from 'mine' to 'ours' to support collaboration and knowledge sharing across the company."

Julie notes this represents a new approach at Woodside.

"We wanted to build a framework for managing information that would allow the business to move quickly when needed and to innovate by working together across silos," she says, noting that the ILM tool brings together practical resources to help take the confusion out of managing information.

"It's designed to help people get the best out of their productivity tools," Julie adds.

And it won't stop there, with the team looking to harness artificial intelligence to make managing company information even easier.

As Neil explains: "The scale of information we produce means that we need to leverage new technologies to help us identify, classify, find and protect our intellectual property.

"We will use technology to shift the burden of 'nuts and bolts' activities like classifying documents, thereby freeing our people up to focus on higher value work."

Chief Digital Officer Shelley Kalms applauds the team effort that resulted in unlocking the collective intelligence (past and present) of our organisation.

"The result will enable and empower our people by giving them the right information sooner, generating insights and actions to improve our business," Shelley points out.

"In this way, we will become a true learning organisation."

Environmental excellence

Woodside's "strong and accountable environmental performance" was acknowledged in Q4 with the Australian Petroleum Production and Exploration Association (APPEA) 2019 Environmental Company Excellence Award.

APPEA cited four main features of our environmental performance, across the petroleum development lifecycle:

- tracking annual targets against United Nations Sustainable Development Goals
- supporting peer-reviewed science publishing
- forging relationships locally and internationally with research organisations
- delivering energy efficiency improvement against baseline levels across our assets.

Debbie Morrow, Vice President Health Safety and Environment (HSE), singled out the "exceptional job" in bringing together people to deliver a consistent environment management approach.

"We started applying this approach about five years ago, during which time we've worked with colleagues outside

of HSE to understand and embed environment management principles based on data-based decision making, meaningful stakeholder engagement and transparency," Debbie said.

Woodside has now won an APPEA Company Excellence Award in Safety or Environment in five of the past seven years.



Honours keep coming

The Offshore Technology Conference (OTC) has awarded Greater Enfield Project (GEP) its Asia Distinguished Achievement Award for its "world class" achievement.

GEP shared the Chairman's Award in our Woodside Awards in 2019.

There had been previous attempts to devise a plan for GEP, Australia's

largest oilfield development currently in production, but the challenges appeared insurmountable.

Trade-offs for the minimum risk had to be found, as did a balance between extracting the resource, the drilling complexity and the subsea system to support it.

A solution involved the drilling and

subsea tie-backs from three fields to the refurbished Ngujima-Yin floating production storage and offloading (FPSO) facility, 60 km offshore Western Australia.

To get there required contributions from many teams and functions, numerous innovations, a raft of Woodside firsts and a world record.

More than 1.7 million work hours were completed on the DPS-1 drill-rig, offshore installation and pipelay vessel, with zero lost work cases.

Likewise, the Singapore shipyard scope for Ngujima-Yin was completed without a single recordable safety incident.

"It was a great team effort across the whole of the project," says Neil McKay, the project's Subsea Delivery Manager.

Learnings are being applied to future projects, such as Sangomar and Scarborough.



Top notch: Top, Woodside's excellent environmental work was acknowledged by its oil and gas peers; below, the Greater Enfield Project received further recognition for its ground-breaking achievements.



Signing off: Left to right, Brian in 1982 on the North Rankin A installation; with his farewell gift; below, indulging his passion for yacht racing.

Woodside's Life of Brian

Our longest-serving employee, Brian Haggerty, retired from Woodside in Q4 after a stint lasting exactly 42 years.

That's 42 years of Brian sharing his knowledge and lending his support in a variety of guises – inside and outside the company.

He joined the company on 16 October 1978 and was allocated the Woodside personal identification number (PIN) of 51.

Brian officially left the company on 16 October 2020. His farewell morning tea was held in November and was attended by many of his colleagues, former colleagues and senior leaders.

His last role at Woodside was Vice President Innovation Capability but not surprisingly he took on various jobs during his four decades at the company.

Despite this long service as an employee, Woodside has not been the only place he's worked.

He started with a mining company after completing a civil engineering degree at the University of Western Australia (UWA), in 1975 and was seconded

to the Faculty of Engineering and Mathematical Sciences at UWA from 2016 to 2018.

And a planned 18-month secondment in 1997 with an oil major turned into a decade.

Those secondments suited his philosophy, as he supports employees broadening their experience outside Woodside.

"I think it's critically important to get a diversity of ideas and to work in different places," Brian expands.

"You can't get enough variety, and secondments are one way to achieve that."

He's also a big supporter of diversity, arguing it's diverse teams that devise the best solutions.

"We need people who think differently, act differently and perform differently," he says.

"A diverse team will get better answers every time."

Brian grew up on a farm in WA and had considered medicine as a career.

"But I've always had a poor memory and somebody told me you had to remember many things in medicine, so I chose engineering," he discloses.

His Woodside career since 1978 took him to Karratha (twice), Japan, five years in the Hague, The Netherlands, and another five years in London and Qatar (where he was responsible for the front-end design of the world's largest gas-to-liquids plant) as part of his secondment.

Asked for stand-out memories, he lists arriving at Dampier on an LNG carrier at sunrise; his first stint in Karratha when he amassed invaluable knowledge learning from plant operators; and overseeing design of the sub-structures for the Goodwyn A platform at a relatively young age.

As for Woodside's future, Brian declares: "Today, it's like we were at 1978 and we need the entrepreneurial and pioneering spirit we had back in the seventies.

"But we have to design a new future – a slightly different future – for the company."

As for himself, he has plenty of plans to keep himself busy – and not only by indulging his passion for weekend yacht racing.

He's been elected WA Division President of Engineers Australia for 2021; he's an adjunct professor at UWA and involved in selecting students for scholarships; he's working on energy strategies for Australia with Infrastructure Australia and is joint founder of the Hydrogen Society of Australia.

At his farewell morning tea, Brian passed the baton of the longest-serving employee to Materials Coordinator Geoff Dyson – whose PIN is 52.



Warrior in war on rust

Travis Baensch has built a career on rust – how to stop it, how to correct it.

Much of that career has been spent with Woodside.

But it was only in March this year that Travis was able to call himself a Woodsider after he switched from being a valued contractor over the past two decades to employee.

“It’s great to be part of the Woodside team and continue the war on rust with some people I’ve built strong relationships with over the past few years,” says Travis, Corrosion Technology Specialist.

“I love working in a role where my team appreciates and fully understands the huge opportunities around corrosion management.

“I get to work with university researchers, Woodside experts and industry-leading vendors and there’s huge job satisfaction in achieving and completing the technology projects so we can help the operating assets.”

He adds: “A lot of low-tech opportunities have been previously overlooked. But if you get it right, it can have a massive impact.”

Woodside has already benefitted from Travis’ wealth of expertise in coatings, not least in helping bring the two-part epoxy Humidur to Woodside (see Trunkline Q3 2018).

“As our coatings application subject matter expert, Travis played an important role in ensuring Humidur would suit our needs in combatting corrosion, which would save us potentially millions of dollars,” explains Production Program Manager Darren Shanahan.

Joining Woodside completed something of a circle for the 41-year-old: his father, Trevor Baensch, helped build our first LNG trains and storage tanks at Karratha Gas Plant (KGP) in the mid-1980s, prompting Travis and family to relocate to Karratha from Western Australia’s South West.

His original plan was to become a marine biologist.

But because opportunities in that field were limited, he decided instead to pursue a skipper’s ticket and he began work as a shark fisherman and on cray fishing boats.

He switched to shipbuilding in the late ‘90s.

“It was my first real contact with coatings and I worked for various companies involved with insulation, sheet metal and passive fire protection,” Travis says.

One of his clients was Woodside.

“I remember working on the Ngujima Yin, the floating production storage and offloading (FPSO) facility, in 2009. Afterwards I was asked to be based at KGP to represent the company as a coating inspector, overseeing the contractors,” he recalls.

In March 2019, Travis relocated to Perth to work full time on the War on Rust campaign under the leadership of Darren.

“That portfolio grew massively with opportunities and projects that initiated and created a ‘Continuing the War on Rust - Version 2.0 – 2020 Expansion’,” says Travis.

Chief Materials and Inspection Engineer Mike Brameld says War on Rust 2.0 is a critical campaign that will improve our ability to effectively manage corrosion and support life extension of KGP and other operational assets.

Travis says the next stage of this journey is filled with enormous opportunities.

“Woodside can realise efficiencies, improvements, cost reductions, improved health, safety and environment outcomes and higher quality from the next phase of projects in the War on Rust,” he says.

“I feel like I have found an opportunity for my next 20-plus years in working with Woodside.”



Protection power: Top, Corrosion Technology Specialist Travis Baensch, right, with Production Program Manager Darren Shanahan; below, testing Humidur on site with contractors Andrew Gray and Gary Stoa.

Protecting heritage

Karratha-based Indigenous Affairs Advisers Daniel Thomas and Sean-Paul Stephens swapped their office attire for personal protection equipment in Q4 to facilitate heritage audits at Karratha Gas Plant and Pluto LNG plant with Traditional Custodians and heritage consultant Phil Czerwinski.

As Daniel points out, the audits

are important in maintaining good relationships with Traditional Custodians, as well as ensuring heritage is not impacted by Woodside's operations.

"Almost as important as protecting the heritage itself, the audits provide transparency and accountability to ensure Traditional Custodians can have

confidence that the company is truly caring for this country," he explains.

The Indigenous Affairs team facilitates such audits of nearby heritage sites annually.

Those in September this year were led by 10 Traditional Custodians over the course of a week, and they included the inspection of petroglyphs (engraved and pecked rock art), artefact quarries, and scatters of stone tools and debitage (material produced during the production of flaked stone tools).

Traditional Custodians who took part on the audit commented how good it was to be on Country, ensuring the health of the sites and reconnecting with the land.

The team were especially lucky a cool breeze was blowing from the sea as they walked through Murujuga's hot but diverse landscape.



Making connections

Celebrations for this year's National Aboriginal and Islanders Day Observance Committee (NAIDOC) Week were held in Karratha in November.

Following a flag-raising, members of Woodside's Karratha Indigenous Collegiate joined rangers from the Murujuga Land and Sea Unit and Peter Jeffries, Chief Executive Officer of the Murujuga Aboriginal Corporation (MAC), for a cultural safety talk.

There was also a Call to Country, conducted by Patrick Churnside, a Ngarluma Traditional Owner.

A Call to Country is a cultural protocol conducted in the Pilbara area whereby Traditional Owners speak to country in their language, seeking safe passage for those not from the area.

Karratha-based Indigenous Employment Adviser Marisa Bradshaw said the event

was a huge success and provided the Karratha-based Indigenous Collegiate an opportunity to connect with Traditional Owners.

"Many of the Indigenous Collegiate are not from the area, so the opportunity to connect and learn from the MAC Rangers and elders enabled them to begin to build a connection to the area and a sense of safety working on Murujuga as a visitor to the land," Marisa explains.



Country check-up: Top, Sean-Paul Stephens, Phil Czerwinski and Ivan Dale during a heritage audit at Karratha Gas Plant and Pluto LNG; below, the Karratha-based Indigenous Collegiate connected with Traditional Owners during this year's National Aboriginal and Islanders Day Observance Committee (NAIDOC) Week.



Calling in: Woodside's Jawun secondees Emily Quinn, Jennifer Kan and Jon Manning this year provided virtual support to Indigenous organisations.

On country **online**

Working “on country” took on new meanings this year with the impacts of the coronavirus spreading far and wide, encompassing the popular Jawun program.

COVID-19 meant this year's Jawun secondees were unable to spend the usual six weeks on site at an Indigenous organisation.

Instead, they delivered their efforts virtually, using technology to maintain contact from afar and to balance their secondment with their roles at Woodside.

And that wasn't necessarily a bad thing.

“Participating in the placement program would have been challenging as I have two young children to care for,” explains Technology Skillpool Manager Emily Quinn.

“So being given the opportunity to complete the secondment virtually was definitely a silver lining of the pandemic for me.”

Emily was one of three Woodsiders who were Jawun secondees in 2020.

“For 11 years, Woodside has enjoyed a close relationship with Jawun, which links supportive companies in Australia with those who would benefit from their assistance and advice,” says Almedina Hodzic, Inclusion and Diversity Analyst.

“Over that period, more than 50 employees have shared their knowledge, skills and experience with a wide variety

of Indigenous organisations in 10 different regions.”

The benefits flow both ways.

Jawun offers a unique practice in supporting Indigenous businesses with strategic engagement but also affords secondees a priceless experience and elevates their cultural awareness to the next level.

Secondees generally return to Woodside enthusing about the experience, relaying how they have been enriched by the invaluable lessons learnt.

“The realisation that I had such limited knowledge and understanding of our Indigenous history and culture was quite confronting,” notes Emily.

“The secondment provided me with an amazing opportunity to learn about our Indigenous culture, broadening my perspective in both my personal and professional life.”

Naturally, the experience (actual or virtual) includes the inevitable challenges.

“‘Out of your comfort zone’ was a recurring comment made by all virtual secondees,” reports Insurance Adviser Jon Manning.

“I believe that this was the major benefit of the virtual secondment as it required secondees to think outside the box.”

Contracting and Procurement Adviser Jennifer Kan says: “This was a great opportunity to help achieve something

positive in what's probably been a challenging year for a lot of people, and perhaps even more so for our remote communities in Australia.”

Emily was seconded to North East Arnhem Land in the Northern Territory where she supported the Rirratjingu Aboriginal Corporation in commercialising a vacant block of land in Yirrkala.

Jon worked with Ngaanyatjarra Pitjantjatjara Yankunytjatjara Women's Council (NPYWC) in Central Australia on insurance matters.

Jennifer assisted the Dhimurru Aboriginal Corporation in North East Arnhem Land identify strategic opportunities for its board to consider in delivering a sustainable organisation.

Woodside's graduates were all also able to participate in a virtual secondment this year.

Emily strongly recommends the program.

“Even though you're not physically present you are still able to be part of a Jawun community, learn about the issues facing our Indigenous communities and be part of a project team which delivers tangible results resulting in small scale change which as a collective will lead to greater change,” she says.

Woodsiders interested in a Jawun secondment (virtual or on country) should contact Almedina Hodzic for more details.

Picture perfect



In a year like no other, when travel was restricted for so many, Woodside organised a photographic competition to celebrate those places in photogenic Western Australia that employees were fortunate enough to visit.

This Is My WA was unashamedly inspired by the success of Woodside's 2019 This Is My Karratha competition. We asked Woodsiders to share their snaps – and share they did.

In all, more than 330 digital submissions were received.

We established two categories and Trunkline photographer James Campbell selected the winning entries, with a People's Choice Award for the photo with the most numbers of "Likes" on Yammer.

James was impressed with the standard, declaring the level of excellence was "a step above last year". He awarded first prize to Digital's Ed Fetahovic, for his photograph of Brookfield Place.

"This image shows an appreciation of light, timing, chiaroscuro, perspective, and tone," James noted.

"The nature of the subjects only being recognisable via their shadows, which are cramped between the dominating shade of the city scape and swallowed by the reflections in the glass, elicits an uneasy emotion."

Runner-up was Project Services Manager Michael Viljoen, whose spectacular photos are well known to Yammer followers, with his photo entitled: Early morning wander through the forests in Bridgetown.

"The conceptual contrast between the harsh unevenness of the man-made fence cutting between the softer symmetrical patterns of the trees as they reach to touch each other over the fence-line while never actually overlapping the fence is fantastic," James declared.

The People's Choice Award went to Christopher McAllister's Cliff Springs.

And a drum roll for the other finalists: Ryan Felton, John Marshall, Simon Hehir, Belinda West, Roland Fricke, Daniel Mascione and Dani Saraceni. Woodsiders can access the entries via Yammer.

Our thanks to everyone who submitted their wonderful photos, and to James for judging.



Super snaps: Clockwise from opposite page, top, Ed Fetahovic's winning photograph of Brookfield Place, in Perth's CBD; Daniel Mascione's aerial shot over Rottnest Island; Michael's Viljoen's early morning take of a Bridgetown forest; and Christopher McAllister won the People's Choice Award with his shot of Cliff Springs, south of Karratha.



Museum's new beginning

Four and a half years after its closure, the WA Museum's Perth site has reopened as the WA Museum Boola Bardip.

"Boola Bardip" translates to "many stories" and was chosen after community engagement with Whadjuk Noongar elders.

The new museum features a spectacular new building that also integrates five existing heritage buildings in the Perth Cultural Centre.

At the official opening in November, WA Premier Mark McGowan predicted visitors would be "absolutely spellbound" by Boola Bardip.

"It's educational, entertaining, interesting, meaningful and architecturally brilliant. I think it'll be one of the one of Australia's great public buildings and one of the world's great museums," the Premier said.

WA Museum Chief Executive Officer Alec Coles says: "After more than 20 years of collaboration, the opening of the new museum also marks the next chapter in the enduring relationship with Woodside.

"Woodside was one of the first organisations to commit to supporting the new museum – even before we had finalised the architectural plans."

Woodside's latest support is focused on the Woodside Learning Studios designed to facilitate hands-on learning experiences and workshops, showcase behind-the-scenes work from museum scientists, and host special talks.

Sandra McInnes, Vice President

Corporate Affairs, said: "We're proud that through the Woodside Learning Studios we can connect people of all age groups with world-class research and scientists."

The studios complement the company's continued support for conservation of the marine environment through the Woodside Marine Biodiversity Fund which provides small grants towards community and outreach activities, education programs and research.



Culture class: Above, the Woodside Learning Studios form part of the new WA Museum Boola Bardip in the Perth Cultural Centre; below, two WA orchestras are joining forces in a new partnership supported by the company.

In tune

Woodside's association with two of Western Australians' favourite orchestras breaks new ground next year when the West Australian Symphony Orchestra (WASO) joins forces with the Western Australian Youth Orchestra (WAYO).

The partnership is backed by Woodside for three years, starting in 2021.

It signals a significant strengthening of the company's support for WAYO and enables the building of the overall

capacity of the sector in West Australia.

Gemma Rapson, Manager Social Investment, says the new support will not only provide WAYO students with educational, training and performance opportunities but will enhance the musical fare available to the public.

"This partnership will create a comprehensive suite of development opportunities for WAYO's young musicians, complemented by an annual major event," Gemma notes.

That suite of opportunities will include musical leadership development workshops and masterclasses.

"The new support will significantly enhance the outcomes from WAYO's existing partnership with Woodside by providing more opportunities to become professional musicians," explains Ben Burgess, WAYO's Executive Director.

One of the orchestras' first collaborations, Dreams of Place, will debut at the 2021 Perth Festival featuring more than 100 musicians, together with local Noongar songwriters and the work of classical composers such as Stravinsky.

"It is set to deliver a concert exploding with evocative images of place," says Alena Tompkins, Executive Manager Community Engagement at WASO.

The year 2021 will mark the 30th anniversary of our partnership with WAYO and more than a decade of association with WASO.



This is where Woodsiders discover a little bit more about their colleagues – and what they’ve been getting up to outside work hours. Think of it as Trunkline’s version of the water cooler.

Because whether it’s satisfying a passion for a sport, an unusual hobby or doing good deeds in the community, Woodside’s employees and contractors tend to live life to the full. As a result, they often have interesting stories or experiences to recount.

If that sounds like you or a colleague and you think it should be shared with the Woodside community, give us a call or drop us a line.

Collecting belts

A chance outing to a taekwondo class in Scotland led to Romanian-born Cristina Angheluta 12 years later collecting a third dan black belt in the Korean martial art in Australia.

Cristina, Senior Geophysicist in the Myanmar exploration team, says it’s more a case of the fast-kicking martial art choosing her, rather than vice versa.

“I was looking for a family-friendly pastime the kids could also enjoy and my two boys took it up for five or six years before dropping it, but I continued in the sport,” says Cristina, who left Romania for Aberdeen, Scotland, to gain international experience in oil and gas.

That same goal led Cristina to migrate to Australia after 11 years in Scotland, but before arriving she attained her first dan or first level as a black belt practitioner.

Since then, she’s progressed up the rung and four years after being awarded her third dan, she’s striving for her fourth. To get there, she’s been training twice a week in classes and solo with the same frequency.

As for its attraction, Cristina explains: “I like the fact taekwondo is supported by science.

“It doesn’t put stress on body parts and it also takes into account the abilities of different age groups.”



Mo’ the merrier

November became mo’ month once more and Woodsiders hairy and non-hairy joined the very worthy cause of Movember by raising funds for men’s health.

The Mo Bros and Mo Sisters of Woodside raised a massive \$37,323, and with dollar-for-dollar matching from the company, a grand total of almost \$75,000 was raised.

Sixteen teams comprising 100-plus members took part in this year’s Movember with the Sangomar Staches taking out the honours as top fund raisers with their \$7814.

“When the Sangomar team takes on a task, we give it 100%,” declared the Staches’ captain Sarah Fraser.

“Movember is such an important cause

as it touches each and every one of the team, be it themselves, their brothers, sons, husbands or friends.

“It encourages men to talk to someone they trust and try to get rid of the stigma of opening up and asking for help.”

Congratulations also to Sangomar Staches’ Kate Radley-Smith (\$1400) and Daniel Johnson (\$1100), and another for Operations Technician Ashley Hutchinson of Mo’s @ KGP Ops, smashing his personal target of \$5000 with a \$5295 total.

Though the Movember fundraising total was a tad lower than last year’s, it must be placed in context: Woodsiders participated in a huge fundraising effort across the company, throughout the year.

In total, employees donated more than \$480,000 across monthly payroll giving and the Corporate appeals in aid of the east coast bushfires, COVID-19 and Christmas, as well as fundraising initiatives for Australia’s Biggest Morning Tea and Movember.



Labour of Love

Christine Forster is a passionate Sydneysider, and a two-term councillor on the City of Sydney Council.

Chris became prominent nationally as a staunch advocate for same-sex marriage during the 2017 campaign, and is widely known as sister of former prime minister Tony Abbott.

She's also Woodside's Media Manager.

And now Chris can add author to her CV with publication of her first book, *Life, Love & Marriage*.

The book comprises a collection of articles and speeches she made between 2012 (starting with her pre-selection speech for Liberal Party endorsement for a Sydney council seat) to the end of 2019.

Chris was a journalist covering the oil and gas industry until she joined Woodside in 2016.

"Some credit is due to Woodside for the book, as my role for the company enabled me to compile and complete it," she reveals.

"I did the bulk of the work on flights back from Perth to Sydney, or while filling in my evenings after work at Mia Yellagonga in my hotel room in Perth."

Life, Love & Marriage was jointly launched by Tony Abbott and Sydney

media personality Ben Fordham in June this year.



Advocate acknowledged



Paul Henderson has long promoted LGBTI+ inclusion, and in Q4 his advocacy was recognised nationally.

Paul, a Materials and Corrosion Engineer, was named in Out for Australia's "30 under 30" awards.

Out for Australia is an organisation that provides role models, mentors, events and support to LGBTI+ professionals.

Each year, it releases a list of 30 Under 30 LGBTI+ leaders for their tangible contributions to the community before their 30th birthday, and Paul made the 2020 list.

"It's an honour to be recognised as one of Australia's young LGBTI+ leaders, particularly for my work in the WA community," he says.

For the past three years, Paul has been

on the committee of Spectrum – the Woodside community for LGBTI+ employees and supporters. He was also one of the pioneers of "Straight Talk" – a sub-group of Spectrum set up specifically for "identifying" employees who are LGBTI+ to create a safe space for them.

Outside Woodside, Paul is the youngest member on the board of Pride WA, which is the state's umbrella LGBTI+ organisation focused on supporting LGBTI+ individuals.

He also led Woodside to winning the Best Overall Float in the Pride parade in 2019.

Paul hopes to use his inclusion in the 30 Under 30 list to further advocate for inclusion in the workforce for LGBTI+ identifying individuals, particularly in engineering and in remote locations.

Tony Humphries is used to getting a close-up view of the offshore North Rankin Complex (NRC) – and now here's a close-up of Tony, taken by Maintenance Coordinator Stephen McElhinney.

Widely known to colleagues as “Bear”, he’s been a member of the maintenance team since the hook-up and commissioning (HUC) of NRC in 2012. And as Lead Mechanical Fitter, he was particularly busy leading the September turnaround at NRC.

Stephen’s photo shows Tony working on the replacement of a power turbine inner journal bearing during the Train 100 compressor outage.

“We were set up for success with excellent prior planning, and experienced, quality-focused trades across all disciplines, and this saw the task executed safely and efficiently,” Tony says proudly.



