

AIMM

STORK MAGAZINE 2020

ADAPTING TO A NEW WAY OF WORKING

- > Geared-up for the projects of tomorrow
- > Remote digital inspection
- > Postponing turnarounds
- > Open for safe business

STORK

A Fluor Company

- 29 **A MASSIVE CONSTRUCTION PROJECT!**
New tank terminal for HES, Rotterdam
- 30 **3D SCANNING VIRTUAL SITE VISITS**
- 31 **ROADMAP TO INDUSTRY 4.0**
Start of the fourth industrial revolution.
- 33 **TECHNICAL HIGHLIGHTS IN KUWAIT**
- 34 **COOPERHEAT BUILDS LARGE FURNACE**
- 35 **POSITIVE OUTCOMES AT PROCTOR & GAMBLE**
- 36 **TURNAROUND AT ATTERO**
When safety gets an extra dimension;
- 38 **CAMPUS STORK**
A place to connect, learn and grow.



14

- 4 **FOREWORD**
TACO DE HAAN
- 5 **CREATIVE IN TIMES OF CRISIS**
- 10 **WORKING TOGETHER REMOTELY**
- 11 **GREEN RECOVERY**
Reduce 30% of your Carbon emissions
- 12 **REMOTE DIGITAL INSPECTION**
Business continuity is crucial
- 14 **ON-SITE CONSTRUCTION TIME**
... at Vopak Terminal
- 16 **GEARED-UP FOR THE PROJECTS OF TOMORROW**
Stork North America in emerging markets.
- 18 **POSTPONING TURNAROUNDS**
Postponing is an option, but generally isn't the wise choice...
- 19 **STORK KNOWLEDGE MANAGEMENT**
- 21 **WE DON'T STOP, FOR NO REASON**
To stand still is to move backward
- 22 **3D PLANNING**
A turnaround success story in Colombia
- 24 **"OPEN FOR SAFE BUSINESS"**
New solutions to help combat COVID-19
- 26 **STORK HEROES**
- 28 **CORPORATE SOCIAL RESPONSIBILITY**
Supporting those in need.



16



10



22

06

"PREDICTIVE MAINTENANCE IS ALL ABOUT BIG DATA AND HUMAN BEHAVIOR"

Prof. dr. Marielle Stoelinga

OPEN FOR SAFE BUSINESS

“When written in Chinese, the word crisis is composed of two characters -- one represents danger, and the other represents opportunity.” John F. Kennedy

Dear Reader,

2020 will be remembered as the year that the COVID-19 pandemic disrupted the world. And while the health risks and the economic impacts are real, I truly believe there is a silver lining to every crisis, including this one. It has brought us closer together, with clients, as teams and colleagues. It has shown our resilience, ingenuity and flexibility and accelerated some important innovative solutions.

COVID-19 affected us all and forced us to find new ways of working, to ensure a safe environment at work and at home. I am really proud of the way everyone at Stork responded, our people in the field at client sites, in our workshops and in the offices. Each and every one is a true Stork Hero, as everyone contributed in their own way to keeping our company open for safe business.

In this edition of AIM, you can read how we listened closely to our clients, figuring out how to best respond to their needs and keep their assets running. Our passion for technology, together with a thorough understanding of the client’s assets and business priorities, made our teams go above and beyond to ensure business continuity for our clients, safely and cost effectively.

We came up with tailored solutions to meet our clients’ site specific needs. Challenged by physical distance restrictions, we found ways to limit or better organize physical presence onsite. We quickly deployed virtual solutions for training, Turnaround planning and accelerated the use of remote (inspection) solutions. We also thought along with our clients and looked for more cost-effective solutions, very aware of the pressure on operational spending and cash in the industry. Together we found new solutions and new terrain for collaboration, for example, in the field of smart maintenance and data-driven solutions like predictive maintenance. These solutions are becoming more mainstream and ultimately result in fewer failures and faults through better maintenance at lower costs, as explained by Prof. Marielle Stoelinga.

Finally, these past months have brought us closer together as teams. Remote collaboration, video-conferencing, all these things now almost feel as comfortable as an in-person meeting. This creates a whole new way of working, making cross-functional collaboration easier and expanding our scope and reach.



Great teams are seldom formed during the easy times, they are formed in tough times.

I truly believe there is a silver lining to every crisis, including this one.

Great teams are seldom formed during the easy times, they are formed in tough times. The care for each other, our clients, and our business, that I have seen over the past months, fills me with pride and gives me confidence for the future. We will continue to manage the hazards and capture the opportunities together. It is our ambition to be the Industry Reference, every day, everywhere and this AIM is filled with stories from around our company that show our broad range of activities aiming for just that.

Enjoy reading and stay safe,

Taco de Haan,
President Stork

Creative IN TIMES OF CRISIS

Adapting a new way of working

As Darwin once pointed out, the ones who are most adaptable to change have the best chance of survival. This is also true in the current situation. But how?

COVID-19 is having a huge impact on asset owners. Many have to deal with problems when sourcing parts or raw materials, which leads to delays in production and maintenance. Also, the demand for products may have changed significantly, and the request to work from home whenever possible needs to be handled creatively.

REVIEW YOUR RISKS

The first piece of good advice for everyone is to stay calm. After that: draw up a new risk analysis. After all, a risk is defined as: ‘the probability of an incident occurring x the consequences’ severity’. Both factors may have changed (significantly) due to the crisis and may require measures, both at technical and organizational level.

KEEP YOUR EMPLOYEES INVOLVED. AND COMMUNICATE.

Once the necessary measures have been mapped out based on future expectations, the next question arises: how do I reach the new situation as quickly as possible in which costs, output and risks are in balance? When developing solutions, take advantage of the knowledge and commitment that employees and partners have. Involving the staff creates support and the ‘desire’ to tackle this crisis situation together (and win, of course!).

CREATIVE SOLUTIONS

To overcome problems relating to COVID-19, it can help deal with the available possibilities using some creativity.

Produce your own parts

When companies encounter problems with the delivery of parts, Stork might be able to manufacture these parts in-house. (For example with the help of a [3D scan](#)).

Fewer people at the site

Performing work on location and still managing to keep enough distance can be achieved by using ‘remote’ solutions where possible [see also pages 10 + 12]. Specialists can connect with employees on site from their own environment and provide instructions if needed. Virtual and Augmented Reality make transferring information even easier.

No people at the site

Excluding all people from a site can be done by placing sensors that can be read remotely. Drones can also be very useful in that sense. Stork has been offering this service for some time already, particularly for inspections at hazardous or difficult to access locations, and it can now quite easily be scaled up to 1:1 for a wider range of applications.

WORK ENVIRONMENT

The ‘social distancing’ society calls for modifications to changing rooms, canteens, toilets, gates, etc. Having fewer people on the premises at one time also allows you to put some facilities temporarily out of service, offering further savings.

For all of these changes, it is important to involve specialists, your employees and business partners for the best results.

For more information watch the webinars on stork.com.



PREDICTIVE MAINTENANCE IS ALL ABOUT BIG DATA AND HUMAN BEHAVIOR

Marielle Stoelinga involves entire maintenance chain in 'PrimaVera' Project

Prof. dr. Marielle Stoelinga is professor at the University of Twente and will spend the coming years leading a multidisciplinary team that will conduct research into 'predictive maintenance'. The technology to do this is already available, but successful implementation appears to depend on many factors that we still don't know enough about. Certainly when it comes to applying it in larger systems.

The holy grail in predictive maintenance is Just-In-Time maintenance. In this maintenance strategy, all relevant data is collected from a system or component that indicates its condition. Known variables in this context are vibration, temperature and pressure. By (continuously) monitoring this data and linking it to a system's most important failure mechanisms, you can predict the best moment to carry out specific maintenance. This ultimately results in fewer failures and faults through better maintenance at lower costs.

RUBBISH IN...

The strategy is clear, and many applications indicate that predictive maintenance can indeed deliver the intended benefits. Consultancy firms such as PwC also believe in the power of predictive maintenance. "Provided it is implemented and applied correctly," says Marielle Stoelinga. Marielle is a professor at the University of Twente and Radboud University Nijmegen (NL) and specializes in 'risk management of high-tech systems'. She also heads the 'PrimaVera' research project (see frame text), for which five million euros has been set aside by the Dutch Research Council (NWO)* to research the aspects that influence the successful implementation and use of predictive maintenance.

"In theory, it's simple", Marielle Stoelinga explains. "The data that you collect using sensors (the big data) is translated into information with the help of analysis software. This software makes use of specific algorithms in its calculations. Using the obtained information, you can accurately determine the required maintenance and the corresponding time frame this needs to be carried out. However, this only works if you enter data of sound quality and in sufficiently accurate algorithms. Here we have the first major technical bottlenecks. If you use sensors that aren't suitable, or you place them in the wrong location or simply monitor the wrong parameters because you aren't familiar with the failure mechanism, the software's predictions will be unreliable or even unusable. 'Rubbish in' is 'Rubbish out', right? Fault data is scarce because, as a rule, there are hardly any faults. This makes it difficult to develop algorithms that can predict faults reliably. To do that, you need a lot of fault data."

As far as monitoring 'the right parameters' is concerned, Marielle has another great example related to the maintenance of Defense helicopters. Marielle: "Maintenance is traditionally executed based on the number of flight hours. A logical choice, you might think, but a research study into the possibilities of predictive maintenance established that the most vulnerable component was in the landing gear. This means that helicopters that land more frequently need



maintenance much sooner than the number of flight hours indicates, and vice versa. By monitoring this critical component in the landing gear, you can predict the required maintenance more accurately and reduce maintenance costs."

ORGANIZATION

Although the technical aspect presents a real problem at the moment, other factors also play an important role in successfully applying predictive maintenance. These factors are people and organizations. >>



*) NWO = Dutch governmental organization that brings Science and Industry together, by funding scientific research.





MARIELLE STOELINGA

Marielle Stoelinga graduated from the Radboud University in Nijmegen, where she also earned her PhD. She then worked as a postdoctoral researcher at the University of California in Santa Cruz, USA. In 2004 she started working at the University of Twente, where she was appointed Professor of Risk Management for high-tech systems in early 2018. She is also affiliated with the Radboud University as Professor of Software Science. In 2019, Marielle Stoelinga received an ERC Consolidator Grant from the European Research Council to develop a new model that will enable better and integrated consideration of both safety and security risks in the decision-making process.

>> Marielle: "Organizations as well as people, need to be prepared for predictive maintenance, which is why there is a great need for business processes to change in practically all companies," says Marielle. This is especially true when applying predictive maintenance within large-scale systems. Choices you make at one point in the chain, can significantly impact other processes throughout that chain. As a result, it becomes harder to scale up small applications to larger ones. The complexity is also why it is so important to consider the entire maintenance chain and involve all stakeholders; from the funder to the people at the workplace. This is exactly what we will be doing in our project and why we are working with a multidisciplinary team."

One of the main themes of the research project is the logistics side of predictive maintenance. Marielle: "If you can predict maintenance accurately and carry it out 'just in time', you save costs by stretching the maintenance intervals as far out as possible. But there is also a good chance of incurring additional costs if you don't cluster the various activities. After all, traveling to a machine, decommissioning it, and carrying out maintenance four times, costs a lot more than doing four jobs in one session. This does mean you'll be doing some of

the tasks a little too early, but these costs don't weigh up against the benefits you gain by taking a logistically intelligent approach."

...AND USERS

Also interesting is the planned sub-study on the 'people' factor. As with many other technological solutions, a successful application stands or falls on the user's competencies. The emphasis is not just on knowledge and skill, but at least as much on 'attitude', or in other words: the will to make it a success. Marielle: "People's behavior has been occupying the minds of scientists for centuries. Like the maintenance itself, we want to be able to predict that behavior as best we can, but we're running up against our own limitations. Every person interprets signals he or she receives differently and then reacts differently to them. This is in contrast to an algorithm, which will always give the same output if you enter the same input."

During the research study, we will examine just how maintenance staff and maintenance planners deal with information and 'assignments' that are generated by the big data algorithms. After all, people often think they know better. By gaining more insight into how people respond to situations in which technology determines and makes decisions, businesses can optimize communicating and managing staff.

NEW MODELS

Marielle: "Interesting times lay ahead of us, with research results that will ultimately help the industry to successfully implement predictive maintenance; also for larger systems. The ultimate goal? Fully autonomous systems that are capable of repairing themselves.

Maintenance contractors can also benefit from this. It fits in a time when contracts are no longer based on specific work orders, frequencies, and operating hours, but on performance. Modern-day contracts, for example, look at the maximum percentage of faults or minimum availability, and no longer at the number of times a year, a hydraulic filter needs to be replaced. The contractor can then decide which measures are necessary to attain the agreed performance and, in doing so, benefit from the possibilities that are offered by collecting big data. This pertains not just to predictive maintenance, but also to improving processes that make systems more efficient, less maintenance-sensitive, or faster. Good news for the contractor, but certainly for the company concerned!"

Find out more about Stork's integrated solutions on: www.stork.com

PrimaVera is short for Predictive Maintenance for Very effective Asset Management and is conducted by a multidisciplinary team.

STORK IS READY FOR INDUSTRY 4.0

The ongoing convergence in information technology with operational technology is opening up massive opportunities at rapidly diminishing costs. And Stork is ready to help clients capitalize on these opportunities.

For example, Predictive Maintenance is a powerful tool to help better understand what maintenance is needed and when (or even no maintenance at all!). In a recent case, Stork applied data analytics to historical data from both sensors and maintenance logbooks related to a specific furnace. This analysis greatly enhanced the understanding of furnace fouling, allowing us to eliminate three cleaning activities per year and instead focus on the real areas of concern. Apart from reducing annual maintenance costs with several million dollars, it also reduced the furnace downtime by two days per year, delivering enhanced production revenues.

Stork is able to advise clients on which sensors to apply why and where, how to connect them, how to analyze the signals and draw the right conclusions, to keep assets running optimally. We can also leverage the digital technologies we have developed or 3rd party technologies to optimize the performance of the assets.

Technologies such as big data, analytics, robotics and the industrial Internet-of-Things are being deployed within Stork to enhance the quality, effectiveness and cost-efficiency of our client-based solutions. [Read more ...](#)



Adapting a new way of working

WORKING TOGETHER REMOTELY

The technological possibilities that allow people to communicate digitally are expanding every day. Not too long ago, even just speaking to each other remotely was a big step forward, nowadays, simultaneously video calling and sharing data is all in a day's work. In these challenging times we see a strong increase in the use of these tools; not only in office and home environments, but also on-site; for the simple reason people can keep working (together) without being physically together. It's good to realize that the benefits that come with it don't just apply in times of crisis, but also in better times afterward, in the 'new normal'.

FLEXIBILITY

One of the main advantages of these remote solutions is the added flexibility it offers in terms of the work that people can

do. For example the employees always have to contact the inspector when a job is finished. Now the inspector doesn't have to come to the site in person but can check the work remotely via video link. No longer does either party waste any time; inspectors don't have to wait until they can sign off on a job, and the staff aren't wasting time looking for the inspector they need, who may be busy with other jobs at that moment.

QUICK RESPONSE, LOWER COSTS

The same type of connection also enables people to make knowledge available and share this knowledge quickly and flexibly. Among other things, experts can provide highly efficient support in resolving malfunctions and answering questions, commissioning installations and machines, or performing inspections. Other technologies, such as virtual reality (VR) or augmented reality (AR), can also be used.

Because people can now work from anywhere with an internet connection, no time and money is wasted traveling, and they can use their knowledge almost simultaneously at different locations. Quick response, lower costs. The possibilities that remote knowledge sharing presents is an

aspect that shouldn't be underestimated, especially for older generation staff who possess valuable knowledge and experience but, for obvious reasons, are now less inclined to travel regularly to faraway places.

SAFETY

Remote solutions like an 'extra pair of safety eyes' are welcome in every situation with specific risks. With the help of (360°) cameras, for example, it is now easier to detect potential hazards and employees can perform their job tasks more safely – and remotely – whether this is outdoors or in a confined space (e.g., in a boiler) for repair work or cleaning work. Using cameras in combination with drones or robots can also significantly improve safety at dangerous locations.

WHICH TOOL?

The choice of the right tool strongly depends on local conditions and requirements. For example, will just an audio connection suffice or are images also needed? How often will the system be used and under what conditions (dry, explosion hazard, chemical substances)? Is hands-free use necessary; what are the environmental characteristics? How noisy is it and how strong is the connection's reception (Wi-Fi, 4G or 5G)? Those who are conscious of the factors that influence the effective deployment of remote solutions will be best able to make the right choice.

To conclude: All tools and training can be made available, but the most significant limiting factor remains people: do they see the potential of these tools or will they delay or even work against their use? Only when they understand the benefits and know how to work with them, will they be committed to achieving maximum results. Perhaps this is one of the very few positive notes; even the most fossilized working methods are forcibly adapted to the new way of working. Or, as the famous philosopher, Waldo Emerson once said: "A mind once stretched by a new idea, never regains its old size"....

Learn more about Remote Collaboration? [Click here](#)
Learn more about Drone technology? [Click here](#)



GREEN RECOVERY

It may sound strange, but in some way, the COVID-19 crisis is comparable to climate change. In both cases there is the physical shock in society with potentially significant socio-economic impact and lives being threatened worldwide. Its complex environmental impact will directly affect business, society, and ecosystems; and governments will seek to mitigate its effects with far-reaching regulations.

TAKE YOUR CHANCE!

On one side, the corona crisis has a positive effect because it is the direct reason why oil and gas demand has fallen dramatically, even as the demand for electricity. As a result, the International Energy Agency (IEA) expects a drop of 8% in CO₂ emissions. On the other hand: for the industry, the price of CO₂ plays an important role in investment decisions; for example, with respect to sustainable solutions. Because this price is far too low and the COVID-19 crisis has delayed the Green Deal, an urgent review of this policy is necessary. With this in mind, the COVID-19 crisis can also be seen as an opportunity to do things better and build a more resilient and sustainable society. The industry can use this momentum to rethink and adjust future plans in which suppliers and customers can be involved.

A FOUR-STEP APPROACH

As an example, a four-step approach to substantially reduce CO₂ emissions:

1. Put the energy basics in place by increasing awareness in the organization, mapping energy consumption and dismantling inefficient equipment.
2. Improve housekeeping by optimizing business operation, properly maintaining the installations and reducing the energy requirements per product.
3. Invest in the best available technologies for the existing process, both for existing plants and for new factories and production lines.
4. Redesign the primary process to build the factory of the future, using new processes, new raw materials, and new technologies.

With the first three steps, it is possible to reduce approximately 30% of carbon emissions, and step 4 is essential to achieve further reduction.

Companies that continue to sit on the sidelines will be badly handicapped relative to those that are now revising strategies to reduce risk and find competitive advantage in a warming, carbon-constrained world. As a global provider of energy solutions, Stork can help to make a 'Green recovery' happen and contribute to a more climate-friendly, healthy, and more resilient society. [Read more](#) on "Green Recovery"





REMOTE DIGITAL INSPECTION

Keeping our people and operations safe and healthy has never been more crucial now. Stork, along with the wider industry, has put more stringent measures in place to help safeguard our people's health and safety, and our clients and their continued operations.

The challenging and ever-changing situation highlighted the need for greater project efficiencies and technological advancements, ensuring Stork continues to provide an appropriate level of service, trust and confidence to its customers. Business continuity is crucial to every global sector, and therefore, it is essential to us at Stork that our clients' needs are still met. We are fully committed to operational excellence and will always look for the best approach to our clients' challenges.

DIGITAL INNOVATION

For Stork, a crucial agenda item is Digital innovation. And the travel restrictions and site access constraints introduced to tackle COVID-19 accelerated key elements of our digital strategy. Stork Quality Service's digital inspection capabilities

are continuously evolving to overcome our clients' challenges. One of Stork's delivery themes within our overall digital strategy is to enable our people working in the field to have the knowledge, data, and information they need to do their jobs effectively and efficiently. One area we have focused on this year is adopting remote digital inspections and the provision of remote expert-capabilities to our field staff.

REMOTE DIGITAL INSPECTIONS AND REMOTE EXPERT-CAPABILITIES

Stork's new way of working enables remote 2nd and 3rd party inspections conducted via a combination of image sharing remote document reviews, high-resolution live-stream video footage with subject matter experts and bespoke client logins for witnessing testing. Our Remote Digital Inspector, vendors

STORK HITS A CENTURY!

Over a two month period, we successfully completed over 100 2nd and 3rd party remote digital inspections, supporting 7 clients across 17 projects, with 36 vendors and 19 Stork Inspectors, which were quicker, safer and provide future scalability for our clients. [Read more...](#)



and clients are connected in real-time, witnessing the same inspection, quicker, safer and adding more value and future scalability for our clients. Business continuity, with no loss in quality, is delivered to our clients through a secure end-to-end digital platform, certified to ISO27001. We can deploy our remote digital inspection solutions in four ways to suit each client's unique needs and circumstances.

Business continuity is crucial to every global sector, and therefore, it is essential to us at Stork that our clients' needs are still met.

Due to the continued success of our Stork's remote inspection capabilities in the new normal, we are now looking to incorporate this technology into other services areas of our business, enhancing delivery for our clients. We are on a digital journey, and we want to continue to work in an agile way, supporting our customers to meet their project milestones. As we deliver more Remote Digital Inspections, we enhance our knowledge of the tool and mitigate some of the challenges this new way of working presents us. We want to seize opportunities to utilize new digital techniques and continue to develop our digital offering.

Benefits of Remote Digital Inspection includes:

- Safe and secure; an end-to-end digital platform.
- Tried and tested; certified to ISO27001.
- Live performance; real-time video streaming and photo sharing with subject matter experts (see page 19).
- Attuned to our clients; bespoke client logins for witnessing testing.
- Business continuity; enables a high-quality Inspection service, removing the need to send an Inspector to the site. The solution maximizes expertise irrespective of location.
- Enhanced safety; requirement to travel and enter manufacturing facilities removed, very remote locations now covered.
- Increased quality; scarce expert resources can be better utilized, providing improved access to Stork's specialist expertise.
- Improved productivity; less time spent on traveling (and reporting) with time focussed on conducting inspection activities.
- Efficiency & Flexibility; simple, quicker, reduce HSE Risks and transport costs, offering greater flexibility, ensuring business continuity in challenging situations.
- A new era in inspection; remote inspection gives the potential for increased efficiency, accelerated decision-making with greater visibility for all participants. The Cloud-based storage solution delivers high-quality videos and images, even at low bandwidth.

You'll find more digital solutions [here...](#)





SMART CONSTRUCTION METHOD SHORTENS

ON-SITE CONSTRUCTION TIME AT VOPAK TERMINAL

In the autumn of 2020, Stork completed the final construction-phase of a new jetty for the Vopak Terminal Left Bank in the Port of Antwerp (BE). An innovative and well-thought-out prefabrication and construction method was employed to reduce construction time substantially.

SCOPE

Vopak and Stork can rely on a longstanding relationship. Stork has been responsible for day-to-day maintenance at several Vopak terminals in Belgium and the Netherlands for many years and has proven its expertise during various modification- and new construction projects.

The new L-shaped jetty provides additional mooring facilities for the terminal, where liquid chemicals delivered by ship are often stored.

SMART CONSTRUCTION METHOD

On this particular project of Vopak, Stork was responsible for the mechanical and electrical scope: Constructing 12 piperack modules and a hose-tower, connecting the modules, on-shore works and modifications to the existing installation.

To keep the construction time down to a minimum, as much as possible was prefabricated on a nearby construction site.

WORKING IN TIMES OF CORONAVIRUS

The coronavirus crisis was a challenging factor during the crucial final months of this project. But because many of the tasks could be performed safely, under controlled conditions, and on the remote construction site, the impact was manageable. Work on site was limited; meaning the jobs could be spread out sufficiently and in compliance with the measures taken, they could go ahead as planned.

Read more about Stork's approach on COVID-19 [here](#).



The 28-meter piperacks were fitted with piping, insulation and tracing before being transported to Vopak and hoisted into position. Also the hose-tower, a skid weighing more than 400 tons, was prefabricated simultaneously - in one piece and fully equipped - and then placed on the jetty. Thanks to this preparation, such as making the connections, prefab constructions and laying the cables for electricity and instrumentation, the team was able to reduce all on-site work to a minimum.

STORK EXPANDS IN NORTH EAST ENGLAND

Having the correct geographical footprint to best support our clients' operations is always at the forefront of Stork's vision.

The East and North East of England in the UK represent a wide diverse range of onshore and offshore industries and presents Stork opportunities to become a market-leading services provider. There is a massive local investment being made in the region in varying industries. Despite recent economic downturns across the whole of the UK, the region remains to be a high potential growth area.

To strengthen Stork's position in this region and to support existing regional contracts, Stork made substantial investments and recently moved into a new regional facility in North Lincolnshire, which along with our existing presence in Teesside, leaves us primely positioned to service the whole of the East and North East of England.

The opening of the new facility has already created new jobs in the local area. And with the expected expansion and growth of our onshore business in the region, we will be looking at creating further additional jobs, bringing a diverse range of personnel with a varied range of skills.



The new Grimsby facility will allow Stork to efficiently deliver our fully integrated support services to regional offshore and onshore clients, providing a base for Stork and our Heat Treatment business unit, Cooperheat, to offer the following regional services:

- Fabric Maintenance
- Flange Integrity Management
- Plant Integrity Inspection and Non-Destructive Testing
- Heating, Ventilation, Air Conditioning and Refrigeration (HVACR)
- Environmental & Industrial Cleaning
- Heat Treatment services through Cooperheat
- Specialist mechanical services

Find out more about our integrated solutions [here](#).

GEARED UP FOR THE PROJECTS OF TOMORROW

"With the vertical integration of in-house fabrication and self-perform construction, we are able to maximize control in project delivery and minimize risk for small-cap opportunities. This value proposition is particularly beneficial for our development efforts with emerging technology as we are helping our clients advance from bench test to pilot to commercial-scale implementation," says Jim Shih, Executive Director, Business Incubation.

Built on the strong legacy of Fluor's engineering, procurement & construction platform and Stork's complete asset lifecycle capabilities, Stork North America offers a broad range of services. This includes industrial operations and maintenance, small capital construction, turnarounds, specialty services, and asset management technologies for a robust cradle-to-grave management and implementation system in support of Client needs. With Clients in the down-, mid-, and upstream markets, power, heavy industrial manufacturing, consumer products & goods, and datacenter industries, Stork N.A. is poised to fill new and upcoming needs in emerging markets and support sustainability efforts in established industries.

Stork North America (Stork N.A.) has proven to be an instrumental asset for Clients seeking an agile, efficient, rapid-response solution, knowing when and how to draw upon Fluor's total technical and functional expertise on an on-demand basis.

One such emerging technology is the hyperloop, a new transportation mode, moving freight and people quickly and safely via a vehicle propelled by electric propulsion through a low-pressure tube. This hyperloop, an airtight vacuum propulsion concept, has come to be known as the 5th mode of transportation (adding to road, rail, water, and air transport). The fully autonomous vehicle uses magnetic levitation and glides at airline speeds for long distances due to ultra-low aerodynamic drag.

HYPERLOOP

Virgin Hyperloop (VH), a leader in this mode of transportation, plans to build hyperloop infrastructure on columns or in tunnels below ground, to avoid dangerous grade crossings and wildlife. Fluor has been Virgin Hyperloop's linear infrastructure execution partner since May 2018, collaborating on linear infrastructure engineering, installation tooling, construction methodology, and project execution. To develop and demonstrate Fluor's proposed methodology to achieve aerospace tolerances in a civil environment, Fluor called upon Stork N.A.'s self-perform construction team, who stepped up



to the challenge and successfully completed the world's first-ever concrete hyperloop transportation tube-section in early 2020. As the prime contractor on the project, Stork N.A. showcased what they do best – execute with cost and schedule certainty; provide nimble response time and engagement between the Client and self-perform crew, and deliver - and in this case, exceed - Client expectations under stringent aerospace installation and production rate criteria.

Through the VH project and other unique efforts, Fluor's Business Incubation group and Clients have found Stork N.A. to be an adept and agile partner in new markets, but it doesn't stop there.

For more information on Stork's value in USA click [here](#).

MULTI-FACETED WAYS THE SERVICE CENTER CAN ASSIST CLIENTS

Just recently, at a power plant in Texas, a Client encountered extensive issues with two of their Flender gearboxes, which operate in the cooling tower section of the plant as part of the cooling fan system. When asked to perform an engineering study and improve the gearboxes accordingly, the DFW team, along with Stork Gears & Services in Rotterdam (NL), was able to find a solution to the Client's gearbox problem and improved the gearbox to prevent future failures. This is just one example of the multi-faceted ways the service center can assist Clients. With an agile and adept workforce and in-house fabrication, repair, and specialty service capabilities, Stork N.A. is equipped to handle the projects of today. But, more importantly, we are prepared to support the projects of tomorrow in efficient and sustainable ways.

NEW SERVICE CENTER IN DALLAS-FORTHWORTH IS OPERATIONAL

We are proud to announce that our new [Stork Service Center in the Dallas-Fort Worth \(DFW\) area](#) is fully operational and is open for business to all customers. The facility is an excellent example of collaboration between Fluor and Stork.

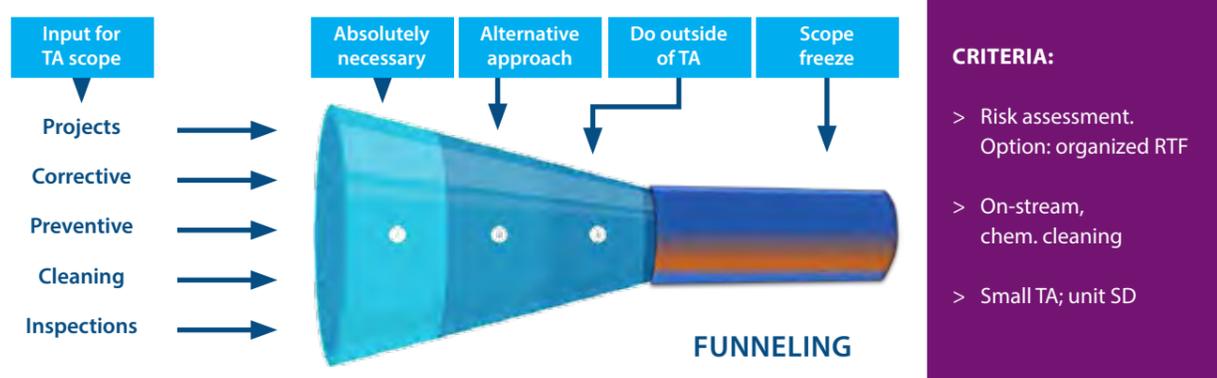
The team at DFW put in a tremendous amount of effort and worked hard to establish the new facility. Activities necessary to complete operational readiness consisted of developing workflow and shop layout, installing overhead cranes and equipment, expanding our quality program, hiring and selecting staff. The team is excited to be a strategic partner with existing customers in the Fluor/Stork network.

Our current service portfolio consists a complete service offering for all types and manufacturers of rotating equipment, including pumps, gearboxes and compressors. From disassembly, overhaul and repair to re-assembly, commissioning and replacement. In addition to the specialized services, we offer a comprehensive fabrication package including but not limited to the fabrication of process skids, furnaces, piping systems, pressure vessels and structural components. We are already developing our capabilities further to include valve diagnostic and repair, and calibration & instrumentation services. Together with our colleagues from Stork Cooperheat, we offer Heat Treatment services and Stork H&E in Ithaca is our partner for Reverse Engineering and Manufacturing.

ADAPT YOUR SCOPE

POSTPONING TURNAROUNDS

Scheduled turnarounds can come under enormous strain because of the current world we live in. After all, it's virtually impossible to have large numbers of people working in one place at the same time. This turns into an even bigger challenge when the people working are employed by different contractors, or have to come from abroad. This can create substantial problems and any mandatory health checks and quarantine can cause lengthy delays. Staying in hotels or traveling safely to the site of the client is suddenly no longer standard practice.



IS POSTPONEMENT THE ANSWER?

Postponing a turnaround is an option, but generally isn't the wise choice. What happens an asset's warranty if, for example, maintenance isn't performed in time? Can the safe operation of the installation and working environment still be guaranteed? And what do legislation and regulations say about (not) carrying out mandatory inspections and tests?

Postponing a complete turnaround is therefore not recommended. However, you can always look at the possibility of rescheduling part(s) of the turnaround to later. By executing only the most critical turnaround tasks, fewer people need to be physically on the site simultaneously, which reduces the risk of infection. This effect can be further enhanced by employing technical tools that can support the preparatory work remotely. (You can also read the articles on p. 10 + 12)

REVISE THE SCOPE

To separate critical activities from those that are less critical, all activities of a specific turnaround need to be reassessed in the light of this 'new era'. We call this process 'funneling'. (See graphic left). In the first funnel step, all activities are retained that are necessary based on a risk analysis.

This is followed by the activities that can be completed or approached using a different method, in for example, a partial stop or with non-invasive techniques. The third step is to consider whether it is an option to postpone the activities to the next stop. The remaining part of the maintenance can be postponed and is thereby 'frozen'.

GET STARTED

When the essential activities have been identified and comply with the current regulations, and fit in the available budget, the slimmed-down turnaround can be planned and executed. In doing so, the new rules and the available options to limit the number of people on site should always be taken into account. It is advisable to work with one contractor, so that all people on site act according to the same rules and the chance of misunderstandings between them is minimized. [Read more ...](#)



CONNECTING AND COLLABORATING: A PRIORITY TO STORK

Stork, combined with Fluor, has gathered significant experience and knowledge in several industries and geographies around the globe. Our knowledge is perhaps the most relevant element of our value proposition to our clients and distinguishes us from the competition.

KNOWLEDGE MANAGEMENT PROGRAM

As an added value to our clients, Stork has implemented a dedicated Knowledge Management Program, designed to encourage, champion, guide and integrate the company's best practices, procedures, lessons learned and reference cases. The program consists of three key elements: Knowledge Communities, Subject Matter Experts (SME), and a Knowledge Library.

KNOWLEDGE COMMUNITY

A Knowledge Community is an open network of Stork employees, engaging in defined knowledge domains and working around operating standards. They embody our core values of Excellence, Client Focus, and Teamwork in a safe and integral way. Currently, there are 15 active communities for delivery, technical and functional platforms.

SUBJECT MATTER EXPERTS

In addition to the communities, we have the SME's; employees hold the honor that stands for professional excellence. It is granted to those employees who own a deep understanding of a particular subject, which can be: material, equipment, service, industry, function, technology or process. They possess factual and theoretical knowledge, are able to apply information to generate new ways of working, have good communication skills and are curious and positively critical. An SME is willing to share that expertise with their co-workers, regardless of location. Our 170+ SME's worldwide are pioneers who help make Stork the industry reference, every day, everywhere.

KNOWLEDGE LIBRARY

All knowledge produced by the communities and the SME-network is stored in Knowledge on Line (KOL). A SharePoint-environment tool developed in an accessible way, bringing knowledge to life by connecting people to a sole source of information. By building a unified and cooperative experience, we can create more value for our customers. Stork has demonstrated that having access to knowledge and best practices makes us moving towards the path of being industry reference. With the active sharing of world-class information through this program, we can allow our teams to work in an affiliated organization, save time invested in collecting insights and increase our efficiency to manage our client's assets. It is our know-how, and we are very proud of it.

SUNCOKE INDIANA HARBOR

Three-Phased Common Tunnel Replacement, Completed On-Time, with No Injuries or Incidents

SunCoke Energy is the largest US producer of coke* and owns and operates five coke-making plants in the United States. The Stork North America Continuous Site Presence (CSP) group, operating as Fluor, has been servicing each of these facilities as the nested contractor with both open shop and union craft since 2017.

In the fall of 2018, the site team at the Indiana Harbor plant in East Chicago, Indiana, was approached by the Client with taking on additional work. The team would be tasked with changing out multiple tunnel sections, with the work taking place in stages between the fall of 2018 and the spring of 2020. The team would be tasked with removing old tunneling, weighing 54,000 to 65,000 pounds each, depending on the

amount of coke debris in the tunnels. The massive sections of new tunnels weighed nearly 54,000 pounds, including rigging. Working amidst the hazardous conditions of the coke-making plants and the ovens' extreme heat, a mix of boilermakers, bricklayers, and laborers logged an estimated 26,000 craft hours to complete the 1.5-year project. Three tunnels were changed in the fall of 2018, 22 tunnels in the fall of 2019, and 26 tunnels in the spring of 2020.

The project enjoyed on-time completion. And, most notably, this demanding work was completed with no incidents and injuries, further strengthening the site team's relationship with the Client and their management team.

**Coke is an essential ingredient in blast furnace production of steel*



STORK BUILDS PHOTANOL'S PILOT PLANT FOR BIODEGRADABLE PLASTICS

New ways of manufacturing chemical products.

Photanol will produce organic acids in a demo plant, using special bacteria that mimic the process of photosynthesis. The method uses CO2 and sunlight to produce chemicals, which are applied in biodegradable plastics, thickeners in food and as intermediates in chemistry.

Stork has build this demo plant for Photanol at Chemie Park Delfzijl (NL), where one of Photanol's key customers, Nouryon, is also located. The demo plant, one hundred times the size of the laboratory set-up in Amsterdam, will run for two years. The demo plant features a pipe made of thin and transparent film that stretches for three kilometers(1.86Mi) An interesting project that is in line with the greening of chemical processes at Chemie Park Delfzijl. Stork deployed a large variety of its services for the execution: from plastic piping and electrical engineering to civil and mechanical services. [Read more...](#)



WE DON'T STOP FOR NO REASON!

Almost all industrial companies regularly or incidentally faced the need to shut down their production facilities. This could be for maintenance, or reduced demand, seasonal influences, or unforeseen incidents such as fire, a serious cyber attack or a pandemic outbreak. From a technical point of view, stopping machines and processes isn't generally the biggest issue. The challenge lies much more in restarting the installation in a controlled and safe manner after a downtime period.

TECHNOLOGY, ORGANIZATION AND STAKEHOLDERS

To stand still is to move backward, some say, and that definitely applies to machines. This means that, on the one hand, one needs to counteract this regression through good maintenance; for example, by conserving the machine well with cleaning, greasing, de-energizing, etc. On the other hand, this knowledge is an important reason to establish a solid plan that prepares the person, the machine and the environment when the installation needs to be started up again. So attention should not only focus on the mechanics, but also on the organization and stakeholders such as suppliers, customers and government. Safety and knowledge retention plays an overarching role in this. To ensure nothing is forgotten during the entire process from shutdown to restart, Stork Technical Services has developed a step-by-step plan. The plan contains all activities that together pave the way towards a predictable, manageable and safe start-up.

TO SUM UP...

- Focus on a trouble-free start-up, not so much on an excellent shutdown.
- Secure the knowledge associated with the installation and processes.
- Conserving an installation does not mean no maintenance is required.
- The degree of conservation depends on the time an installation is out of operation.
- A good 'decommissioning plan' is the result of a risk analysis that answers the question: what can go wrong during start-up. Use a FMECA (Failure Mode Effect & Criticality Analysis) to define required maintenance with focus on Start-up.
- Place emphasis on the safety plan

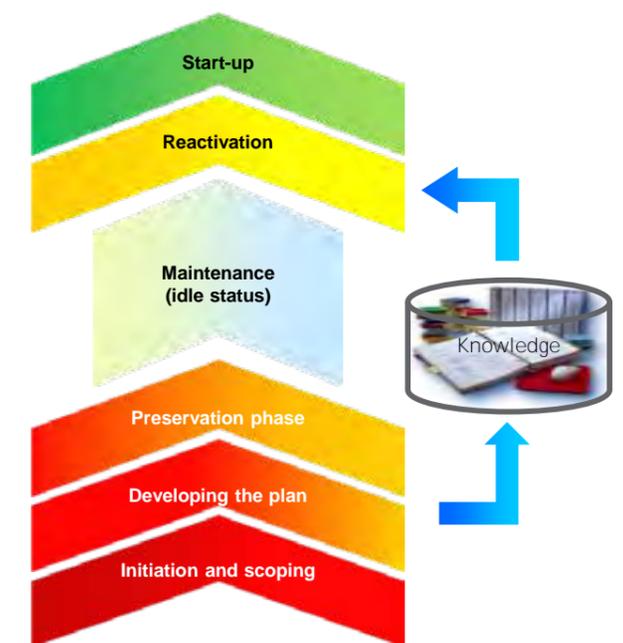
Stork possesses all the knowledge and expertise to support companies in all steps and at all levels. From project management and planning to technical conservation.

[Read more...](#)

STEP-BY-STEP PLAN

In the graphic, the six-part step-by-step plan is shown schematically. The first two steps are preparatory for the shutdown. All facts are listed in these first steps, and the impact they have on the technical aspects, organizational aspects and stakeholders. When will the installation be decommissioned and for how long? What does this mean for the purchase of raw materials, energy consumption, sale of products and disposal of residual materials? In the next step, the requirement plans are written, and people and resources are determined. Steps 3 and 4 focus on the plant's actual shutdown and all tasks that need to be carried out during the period of inactivity. In this step, attention is paid to technical as well as organizational and human aspects. For example, once the plant is shut down, it is essential to keep employees involved by giving them a different task and constantly informing them. At the same time, retention of knowledge – which runs parallel to the six steps – is a crucial focus towards a smooth start-up without any hick-ups.

Finally, in step 5 and 6, all activities are carried out before the start-up. Among other things, these involve removing conservation measures, releasing subsystems and informing people. During the actual start-up, safety is explicitly taken into account and people are instructed to act immediately in case of possible defects or incidents.





TAKING A TURNAROUND EXECUTION
ONE STEP FURTHER

From 2D to 3D planning, a success story in the Refinery of Barrancabermeja, Colombia.

RECOGNITION OF INNOVATION, LEARNING, AND EXCELLENCE

We understand the impact that turnarounds can have on our clients; a closing week every two years represents around 1% of a platform's production capacity. Therefore, we strive to reduce any downtime through strategic projects and resource planning, and deploy multidisciplinary teams using innovative technologies.

Our team in Colombia has successfully developed an integrated data-driven approach to achieve smart changes: offering maximum predictability in cost, planning, safety and quality, thus minimizing the shutdown time and achieving goals earlier in the process. In addition to all operational processes, a communication and collaboration method is created to ensure effective teamwork.

Due to the Covid-19 measurements, the need to maintain effective social distancing and the installation of additional sanitation-equipment has been of utmost importance to maintain biosecurity in all operations. For this reason, the use of 3D-models has become an essential turnaround planning tool. This allows Stork to analyze if there are any interferences between jobs performed simultaneously and workers' density. Additionally, the models will enable the re-organization and evaluation of common areas such as bathrooms and resting areas, thus, complying with the mandatory distance between workers.

The extensive detail in a 3D-model allows the team managers to generate a specific and detailed overview that facilitates the turnaround's planning; resulting in

optimization and increased production. With our unique combination of strategic project knowledge, resource planning and innovative technologies, we increase the efficiency and service we deliver to our clients.

The 3D system (see image below) implemented in the Barrancabermeja Refinery shows all the main parts of Block #1 of the balancing unit. The 3D details show a.o. the geographical distribution of the equipment that will intervene in the turnaround and the location of the equipment assigned to carry out all work packages.

We have delivered more than 2,500 turnarounds and established an unrivaled track record in the many industries we serve, always looking to enhance the way we operate to minimize downtime and maximize performance. Including the planning in our work preparation methods ensures that our turnaround-execution, with 3D planning, is one step further. We continue demonstrating that we are leaders making the turnaround success and that, with our great initiatives, we achieve excellent results for the benefit of our clients. [Read more...](#)



**COVID-19
 HOTLINE IN
 STORK LATIN
 AMERICA**

As COVID-19 impacted our operations, HSE strategies had to move towards prevention and health, making sure that Stork could guarantee workers' safety at every operation.

One of the most successful strategies to support colleagues during these challenging times is the COVID-19 hotline.

This call center, opened in March, was targeted at employees, their families and communities. The hotline, available 24/7, provides an accessible helpline for medical and psychological support for free. In this channel, any question or concern on health, safety, or any psychological issue can be asked. The service is available 24/7 via cellphone or WhatsApp messages and has already received more than 900 calls and inquiries from all around Colombia and Peru. This initiative has been celebrated among Stork clients, communities and authorities, receiving the recognition of public institutions such as the Antioquia Government in Colombia.

This strategy, combined with close communications with clients and daily medical follow-ups to all the employees, have Stork in a leading position with all stakeholders. [Learn more...](#)





OPEN FOR SAFE BUSINESS

New solutions to help combat COVID-19

Operationally, we are always innovating and looking for new ways of working. The current Coronavirus pandemic has, however, emphasized to the wider industry the need for greater project efficiencies and technological advancements, which will ultimately bring long-term change to the global marketplace.

Although the full extent of the pandemic impact is still unknown, we remain aware that many constraints and restrictions are still in place and may become an issue for our clients' day-to-day activities. These unforeseen hurdles have rapidly propelled Stork to innovate new capabilities and bring about a complete digital transformation to ensure Stork clients can remain open for safe business.

SANODAF

In the UK, Stork's Environmental & Decontamination division and AMS Global Group (Aberdeen Marine Surveyors) have collaborated to provide a unique deep-cleaning service for our clients' offshore and marine assets. Our progressive partnership means we can efficiently mobilize personnel, equipment and the innovative, environmentally friendly chemical Sanodaf, which allows for touchless disinfection of offices, accommodation, toilets, handrails, and plant and equipment which may be cross-contaminated. The novel

technology can quickly and cost-effectively disinfect and sterilize an environment, both surface and air, to control and mitigate the outbreak and spread of bacteria, germs and infectious diseases. The dry mist treatment is applied as an electrostatic spray that allows both surface and air disinfection leaving no residue behind. It is non-corrosive, safe for use on electric devices, 100% biodegradable and environmentally friendly. This exclusive product kills 99.99% of harmful pathogens, bacteria, viruses, fungi and mold on surfaces and in the air, which is even more critical during these times.

UVC LIGHT TO TACKLE BIOFILM

Biofilm microorganisms such as bacteria, fungi, algae and protozoa are commonly found on surfaces in HVAC systems where moisture forms. Untreated, Biofilm can cause health problems through poor air quality in air conditioning units, as well as mechanical system issues affecting airflow and system performance.

Stork's Heating, Ventilation, Air Conditioning & Refrigeration (HVACR) team based in the UK has introduced a new UVC Light service to combat this challenge. Our experts introduce UVC light applications into strategic HVAC locations such as airlocks, ductwork, and air handling units to completely destroy the Biofilm. This crucially protects the health of individuals and eliminates unplanned maintenance costs.



Jim McQueenie, Stork's HSE Director, talks about

THE USE OF "SECRET WEAPONS" DURING COVID-19

CARING, SUPPORTING & PROTECTING THROUGH A GLOBAL PANDEMIC

This year, we took the next step in our HSE-journey at Stork. Building on ten years of solid HSE foundations set by REACH, we named this evolution "Safer Together." More than a brand or a program, Safer Together is our identity; it's who we are at Stork. It's how we think, communicate, and act with our colleagues, clients and communities. Whatever priorities we have each day and how those priorities change, Safety is always our first core value. We work safely, or we don't work. Taking care of each other, supporting each other and protecting each other is central to how we do things at Stork, every day, everywhere. But we could not have imagined how critical this HSE evolution would be when faced with a global pandemic this year.

So, how did Stork respond to COVID in practice? Like many global organizations, we maintain the capability to deal with crisis events, including pandemics, through our Crisis Management and Emergency Response process. In short, we identified the risks, put a process in place to manage them, and ensured we could practice what we needed to do if and when crisis events happened. A top-down communication, meeting and accountability structure with processes and tools behind it.

It is true that pandemics are foreseeable and should be on our risk register, with well thought through response plans. However, the one thing that surprised everyone about the pandemic was the pace at which this situation developed. The plan we had in place worked well enough to be effective, but the real lesson from such a fast-moving situation was we had to 'stay agile.' Being prepared, having a response plan in place is only half the story; in fact, it's not even the important

half. What is important is not the event; it is what follows... This is a momentous period in our history that several generations which follow will study and learn from. In business, this pandemic causes volatility, uncertainty, complexity and ambiguity, and we need to respond to that. We needed to figure out how to 'bounce-forward' as companies and as a wider society.

STORK HEROES

At the heart of any response is resilient people > the other, most important half of the story: at Stork, we call them our Stork Heroes. It's all about people. As a leadership team, at all levels of the response – locally, regionally and globally – our response to COVID could never be a success if it was only a top-down, process-oriented approach.

From the very early stages of our response, we put everything we could into helping our teams stay resilient. Through sustained, regular, personal, open and honest communication, we aimed for our Stork Heroes to have as full a picture as we had (as a leadership team) of the challenges we faced.

We asked our people to pick up the challenge to help us find the best paths, solutions and innovations to help us navigate through the storm together. From the moment we flipped from top-down to bottom-up, our role as leaders become one of supporting and sustaining our site teams. To herewith provide business continuity for our clients, seeking solutions to new problems, feeling safe to bring ideas forward and assuring everyone of unconditional support. As leaders, we prepared the response plan, but our Stork Heroes kept us open for safe business and have helped keep our client assets running safely. [Read more...](#)



Taking care of each other, supporting each other and protecting each other is central to how we do things at Stork, every day, everywhere.

VOLATILITY	UNCERTAINTY	COMPLEXITY	AMBIGUITY
Be clear on your commitments and always follow through to keep energy and momentum	Invest your time in your people, maintain trust, work as partners and be open about what you don't know	Openness and transparency in communication given and received builds trust and collaboration	Clarity of purpose, direction and responsibilities empowers others to act on their initiative



#STORKHEROES KEEP ONGOING

As a globally operating company, Stork works with people who perform tasks for customers in various countries worldwide. When the COVID-19 pandemic broke out, virtually no country was spared, and Stork immediately switched to the highest safety level to ensure its staff's well-being. After all, it's the people that are crucial to our success, which is why the company is committed to safeguarding their health at all times.



WORKING FROM HOME

Part of the answer is to allow and enable people to work from home. But for the people whose on-site expertise is essential, for instance in commissioning, maintenance, troubleshooting, etc., physically visiting the plant cannot be avoided. Especially for them – our Stork Heroes – measures have been taken with the greatest possible care to ensure the risk of infection is kept to an absolute minimum.

ON THE ROAD OR ON THE SITE

Measures include a health check at the gate, access to the premises with no need to touch anything physically, one-way traffic in the offices, and using the canteen in shifts. Furthermore, all travel to and from the sites has been set up in a way that minimizes the risk of infection. Hygiene, as we all know, plays a vital role in every respect. This means that tables, chairs, desks and doorknobs are cleaned regularly and employees can disinfect their hands in every area of the buildings.

INFORMING OTHERS

And, as the Stork Heroes are used to from their employer, people are constantly informed about the measures and, in particular, the reasoning behind those measures. Through text and icons, people remain motivated to abide by the rules and to point out the rules to others. Moreover, for projects at the site of the client, as much as possible is done remotely. Meetings, training sessions and consultations are now all conducted digitally. You can even visit a doctor by video! This way, our heroes get what they deserve: a healthy work environment with minimal risks. [Read more...](#)

AT STORK, WE WORK IN 90 COUNTRIES, AND THIS IS ONLY A FLAVOR OF THE COMMITMENT AND INGENUITY OUR TEAMS AROUND THE WORLD SHOWED – AND STILL ARE SHOWING.

HEALTH & WELLBEING

First and foremost, is our response to the health and wellbeing of our people and their families. A multitude of actions taken with the single purpose of ensuring our people, wherever they are, and whatever situation they are dealing with, are not dealing with it alone.



COVID-SAFE ON ARRIVAL

At sites, our teams are using screening to ensure those arriving at the site are checked and confirmed fit to start work. Travel to and from the site is re-organized to maintain social distancing. Social distancing and 'touch-free' tagging are applied at check-in/check-out bottlenecks, such as site gates.

COVID-SAFE FACILITIES

Redesigned workshop layouts ensure job areas and workflow minimizes transmission risk while maintaining safe operations.



On larger sites, the use of vehicles is required to move equipment and people. A simple but innovative screen partition design (marked in the photo by red arrows) isolates all four vehicle occupants. Buckled up, masked up, segregated and ready for work! Maximum safe occupancy, staggered break times, 'bagged meals,' and of course, sanitization allows for breaks without introducing unnecessary risk.

COVID-SAFE SITE COMMUNICATIONS

Site communication, particularly pre-start meetings where critical operational and planning information is shared, is one of the most essential activities. As you can see, a little more distance makes us Safer Together.



TELEMEDICINE

Collaborating with our own Occupational Health teams as well as external medical providers, gives our people access to support through their computer or phone. For example, in Colombia, a dedicated helpline, available to employees and their families, is staffed by doctors and psychologists to support anxieties and mental health concerns that are evident through this ever changing time.

OFFICE FACILITIES

While most of our offices remain at low occupancy, our HSE and Facilities teams evaluate, plan, redesign, and update each unique facility to ensure those returning to Stork offices feel safe and protected. [Read more...](#)



CORPORATE SOCIAL RESPONSIBILITY

Supporting those most in need throughout our global communities. Corporate Social Responsibility (CSR) has always been important to Stork. But now more than ever, as life has rapidly changed for all of us, we want to ensure that we are playing our part in supporting those most in need throughout our global communities.

In the UK, Stork's dedicated CSR Group is all about playing our responsible part in society and giving back through worthy causes. They actively manage the connections between our people, charities and the local community. Their initiatives focus on achieving economic, social and environmental benefits for all.

Stork's Corporate Social Responsibility (CSR) Group was established to:

- Review and support requests for charitable donations as well as support from staff and contractors, individuals and community groups.
- Make colleagues aware of the volunteering schemes and other opportunities that are available to them.
- Manage the relationship and activities of staff's chosen charities, for example:
 - Aberdeen (UK) - Friends of Roxburghe House: Roxburghe House is a specialist palliative care unit in Aberdeen, where care concentrates on symptom control for patients with life-limiting illnesses.
 - Southport (UK) - Liverpool Women's NHS Foundation Trust: As their name suggests, they specialize in the health of women and their babies - both within the hospital and out in the community.

Based in Aberdeen UK, Stork's CSR Group has been inundated with ideas from colleagues around how we can help our local communities during these challenging times. The CSR Group received a larger number of requests than ever before, which will not go away and may even increase if we are to face cyclical lockdowns and social distancing long term. During these taxing times, we want to continue shining a positive spotlight on our colleagues who are out in force to support their local communities. We are incredibly proud to highlight just a few of the amazing activities our CSR Group and colleagues have been involved in. Come rain or shine, our people were out in full

swing for all those in need of a bit of help during the COVID-19 pandemic.

PPE DONATION TO A LOCAL CARE HOME

Stork was extremely proud to donate personal protective equipment (PPE) to the staff of Fergus House Care Home based in Dyce, Aberdeen. Waste disposal bags, gloves, goggles and masks were all delivered to the local care home to keep staff and residents safe. Housing up to 43 residents at any one time, Fergus House provides a safe and happy home for all who live there and the PPE Stork has donated helps to ensure everyone remains as safe as possible. We are delighted that our contribution will help the staff of Fergus House continue providing excellent care to their residents while protecting their own health and safety.

COOPERHEAT DELIVERING ESSENTIALS TO LOCAL COMMUNITIES

Cooperheat works with a local COVID-19 Volunteer Support Group and Sefton 4 Good, a charity initiative from Sefton Council for Voluntary Service (CVS), which encourages local people to come together and give their time, skills, money and resources to help local good-causes. In both cases, our dedicated Cooperheat volunteers are on standby with 12 Cooperheat company vans, to promptly respond to requests as they come in. Our volunteers provided "service with a smile in your hour of need" and were able to pick up and drop off essentials, including food and medicines, to those who were unable to leave their homes.

Thank you to everyone who continues to support worthy causes at such a crucial time. The selfless voluntary work of our people is a testament to our culture at Stork – "We Care, We Support, We Protect."



A MASSIVE PROJECT

CONSTRUCTION OF A NEW TANK TERMINAL IN THE PORT OF ROTTERDAM

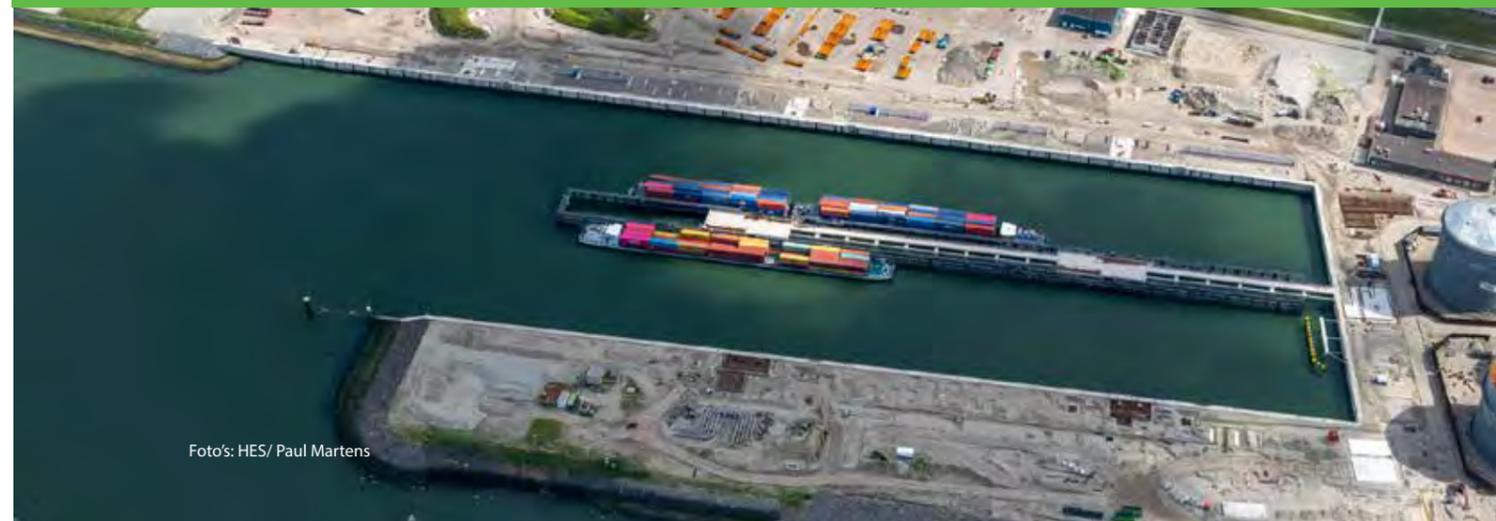
Work is in full swing on the new HES Hartel Tank Terminal in the Port of Rotterdam. Here, an ultramodern storage facility will rise from the ground on a site of 27 hectares: 54 tanks with a total capacity of 1.3 million m³ for clean petroleum products (gasoline, diesel, gasoil and aviation fuel), and biofuels. It is specifically designed for mixing and blending operations. The products arrive at and leave the terminal partly through pipelines, but mainly by ship. Seagoing vessels up to the size of VLCCs (Very Large Crude Carriers) and a draft of up to 24 meters can moor at the quay, which has six berths. A total of nine berths in the Hudson port will accommodate inland vessels before their onward journey to the European hinterland.

The terminal is being built according to the latest technological state of the art regarding permit requirements, environment and

safety. Excavation and civil engineering work began in the fourth quarter of 2018. A consortium of contractors is currently carrying out the construction of the tanks and the associated pipelines. A total of ten parties have been selected, from engineering to contractors and suppliers of materials, to help build the most modern and safe tank terminal in the Netherlands.

Stork is the leading party for all Piping, Mechanical and Steel construction works. Upon completion of the project, Stork will have installed more than 75 kilometers of pipelines. To ensure a fully integrated and seamless approach for the customer, Stork also provides temporary facilities, material handling, storage facilities and equipment and tools.

[Read more about our construction capabilities...](#)



Foto's: HES/ Paul Martens



VIRTUAL SITE VISIT THANKS TO 3D REALITY CAPTURE

If there's one thing that counts in engineering and construction, it's that everything must be accurate to the millimeter. If an object needs to be adapted or a project needs to be done in an existing space, fundamental elements are accurate measurement data and visual reference. We now have this capability through 3D laser scanning: three-dimensional, extremely precise and without overlooking a single detail.

MODELING AND DESIGN

The 3D scanner allows you to accurately scan current situations and layouts of factories, buildings or pipe bridges. Using the point cloud that was created, pipes and structures can be measured to an accuracy of 1 to 2 mm. To do this, we use the CADWorx software program. It works perfectly for one-on-one pipeline replacement projects but is also ideal for engineering in new work projects.

When 3D scanning is employed to estimate on potential projects, it quickly shows if there are any clashes in the sections where the work needs to be done. Our output then consists of Stork Isometrics, including parts lists for the required materials.

HELPFUL TOOL DURING COVID-19 RESTRICTIONS

But there's more to it than just measuring and modeling. After the 3D scan is done, the data can be quickly translated to an interactive 3D Reality-Capture web application. It means you have all available data at your fingertips and no physical site visits are required anymore. By walking through it in a virtual environment, you get all the specific information you need. A very smart application, especially in situations where access to the site is limited, such as during the COVID-19 lockdown.

ADVANTAGES AT A GLANCE

- Ability to offer ideas and input to the customer - anomalies are identified earlier;
- Better quality and safety through better insight into actual situations in plants;
- Reduced costs due to fewer site visits, including downtime of systems and /or factories;
- Reduced assembly-costs as a result of first time right.

STORK MIDDLE EAST SECURED STRATEGIC NUCLEAR INDUSTRY CONTRACTS



"The United Arab Emirates (UAE) has initiated a program to establish a commercial peaceful nuclear energy program in the UAE for the procurement, design and construction of four nuclear power plant units at the Barakah Nuclear Power Plant (BNPP) site. Nawah Energy Company (Nawah) will operate and maintain the four units. The Nawah vision is to be globally recognized as a top nuclear operator and the Nawah mission is to safely, reliably and efficiently generate electricity from nuclear energy to power the growth of the UAE.

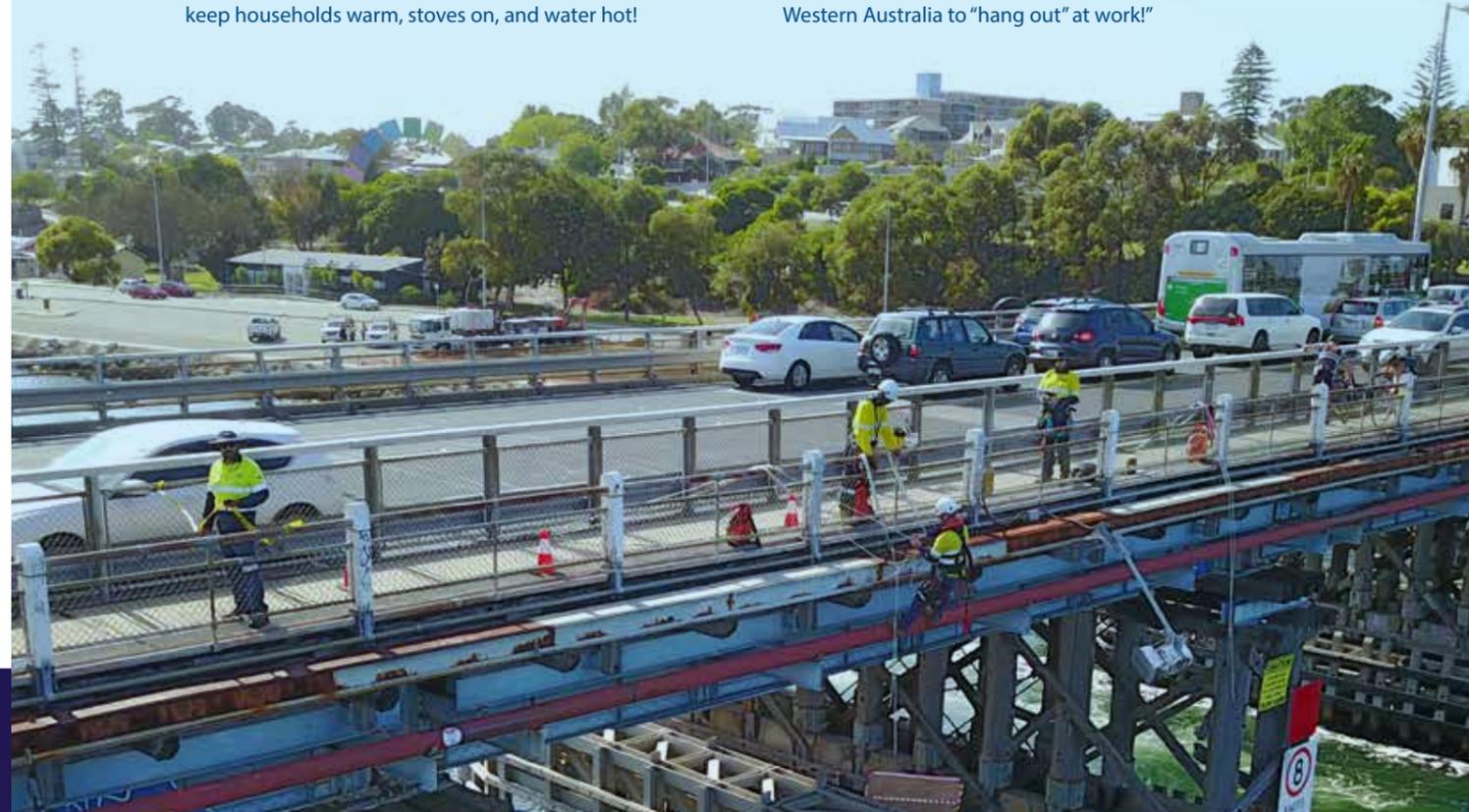
The 3-year contracts agreement for Stork, to supply NDE and Online leak sealing services, will hopefully be the first of many scopes awarded in the United Arab Emirates for the first Nuclear Power Plant on this location. Stork provides an array of different inspection techniques, including RT, UT, ToFD, PAUT, ECT and many other Inspection Services, in addition to the specialised mechanical services of online leak sealing.

'HANG OUT' @ WORK

At our Stork office in Western Australia, we're used to working on heavy industrial oil and gas, mining, power, and chemical sites. But every now and then, our technicians get to step away from this environment and enjoy some of the stunning views our city has to offer.

On this occasion, inspecting and assessing our domestic gas piping network's integrity via rope access over the Victoria Quay Traffic Bridge in Fremantle, helped our client ATCO Gas keep households warm, stoves on, and water hot!

On these photos, you'll see the rope access team in action alongside their support team monitoring our safety from a vessel in the water below. Another beautiful day in sunny Western Australia to "hang out" at work!"



ADVANCED TECHNIQUES FOR DETECTING CORROSION WITHOUT REMOVING ISOLATION

A refinery in Western Australia awarded Stork's Kwinana Services Centre a 3-year contract providing a CUI remediation life-extension program using rope access solutions.

either OpenVision C Arm Real-time radiography or traditional digital radiography.

- For, in particular, elbows, the Stork team utilizes an encoded Phased Array corrosion mapper to determine the extent of the wall loss.

For these projects, Stork uses multiple high-end technologies to detect corrosion without the removal of insulation, such as:

- Long-Range Ultrasonics is used as a rapid screening tool to locate areas of concern, quantifies them through

This contract was awarded due to the Stork team performing at such a high level on a very complex scope and almost entirely on ropes for an earlier pipeline integrity program for this Client. [Read more...](#)



ROADMAP TO INDUSTRY 4.0

Wouldn't it be great if we could explain in just a few hundred words how to implement Industry 4.0 in an organization? But unfortunately, that won't work. Based on various projects and previous implementations that Stork has supervised at various companies. However, we can identify a number of beacons. And, above all, single out the pitfalls!

As the fourth industrial revolution, Industry 4.0 is hinged on number of specific technological developments relating to:

- sensors (small, versatile, affordable),
- connectivity (a wide range of possibilities for wireless communication),
- storage capacity (in the cloud),
- hardware (from laptops to portable systems) and, of course,
- software.

These developments have now reached the stage that we now have the technical resources available (and accessible) to collect, store, analyze, and translate data into information. This is essential as it forms the basis for improving the reliability, safety and availability of machines and installations, optimizing processes and saving energy. The ultimate benefits subsequently lie in increasing and improving production, and in reducing costs.

HUMAN SIDE

Even though the technology is there and the knowledge has

been developed to do the previously described 'smart work' for you, experience tells us that more is needed to implement it successfully. The main bottleneck is the human factor, i.e., people who aren't always willing to use the technology correctly. This may be due to a specific fear they have, or people can't visualize the benefits or simply have no idea how it works.

Particularly with Industry 4.0 – where technology plays such an important role – it is therefore crucial to involve, inform and instruct employees from the very first moment. In this way, they can familiarize themselves with bite-size steps, learn to see the possibilities and, eventually, contribute creatively to applying all this technology in practice. To manage the process effectively, it is imperative that specific people are given responsibility for the implementation and, afterward, to maintain all aspects relating to Industry 4.0.

FOUR-STEP PLAN

In broad terms, the implementation of Industry 4.0 is based on a four-step plan that Stork has successfully implemented and managed in recent years.

1. Take stock of the current state of affairs. What traditional methods and resources are currently being used and what could be the alternative Industry 4.0 approach?
2. Develop a comprehensive road map that starts off by setting a goal – for example, an autonomous plant, reducing maintenance costs by 20%, increasing availability to 97%, etc. Also establish a realistic timing plan.
3. Implement the previously discussed new technologies, measures and conditions, using existing norms and standards. In this step, also determine what the minimum

requirements are and what might be desirable or useful.

4. Safeguard Industry 4.0 by periodically monitoring, setting up and overseeing KPIs, while also keeping the team motivated. This is the best moment to link Industry 4.0 to the vision of continuous improvement. Use the analysis results of the data obtained from the various sensors in step 3.

PRACTICAL VALUES

From the various projects in Stork's portfolio, the added value of Industry 4.0 for maintenance within the industry can be expressed in:

- 5-10% cost reduction related to inventory
- 2-6% increase in availability
- 10-40% cost reduction in reactive maintenance
- 3-35% fewer security incidents
- 5-20% productivity improvement
- 10-15% increase in service life

Not all improvements can be accomplished in the same cycle – this is also not recommended – but depend largely on the objectives formulated in step 1.

However, the figures indicate the number of possibilities that Industry 4.0 offers and have already motivated many companies to initiate the program in collaboration with Stork.

Watch our webinar about a 4.0 driven organization-roadmap [here...](#)

TECHNICAL HIGHLIGHTS IN KUWAIT

KIPIC AL-ZOUR REFINERY PROJECT

The Kuwait Integrated Petroleum Industries Company (KIPIC) had contracted FDHJV (a Joint Venture of FDH and JV) for Design, Engineering, Procurement & Construction of the AL-ZOUR REFINERY located in Southern Kuwait. FDHJV was facing sand that needed to be removed from the cooling water chiller-system in the refinery. They were unable to physically remove and flush the system to the desired project passivation specifications.

Stork was approached to carry out the filtration and removal of sand from dead legs in the pipe work of the 48" pipe cooling water-system. Stork's track record with Inspection Services helped to build the relationship quickly. And while their peers were proved unsuccessful, the Stork teams took up this challenging scope and designed a suitable Filtration solution to address the issue. Our crews dried a total of 17 complex piping-loops with a high-volume flushing technique under stringent client expectations.



STORK PROVIDES SOLUTION FOR REMOVAL & DRYING OF HYDROTEST WATER

The Kuwait National Petroleum Company had contracted a Joint Venture of Petrofac International, Samsung Engineering & CB&I Nederland B.V (PSCJV) for Design, Engineering, Procurement & Construction of a 'Clean Fuels Project' in the Mina Abdullah refinery in Southern Kuwait. PSCJV were facing serious water accumulation issues in the Heat Exchangers installed in the refinery; they were unable to physically drain and dry the heat exchangers to the desired project drying specifications. Stork was approached to provide a solution for the removal & drying of the hydrotest water from the dead legs in the heat exchangers and pipework. Stork teams took up this challenging scope. With the help of our specialist vendor (Synertek), we designed a suitable vacuum drying solution to address the issue. The job was well planned and delivered in a flawless manner that desired drying levels were achieved in the multiple exchanger trains across the refinery. Our crews dried a total of 51 complex piping-loops and exchangers with vacuum drying techniques under strict customer requirements.



COOPERHEAT BUILDS A LARGE GAS FIRED GUILLOTINE-DOOR FURNACE IN CROATIA

FURNACE FOR HARBURG FREUDENBERGER

Cooperheat was approached by Harburg Freudenberger, a company based in Belišće Croatia, in July 2019 regarding our ability to build a large gas-fired guillotine door furnace to support part of their manufacturing process within their large facility in Croatia. They contacted Cooperheat because they had previously been given access to a Cooperheat furnace operated by another company in Croatia for around 40 years and is still going strong.



Harburg Freudenberger is a manufacturer of machines that produce tires for cars and lorries; their clients include many European and Japanese multi-national tire manufacturers. They will use the furnace to

heat treat and normalize parts used to manufacture their tire making machines to relieve stress in the parts following welding.

This project stood out from other inquiries as the client wanted a full turnkey service, with the successful supplier being responsible for all aspects of the build process. This included manufacturing and installing the chimney for the furnace, designing the groundwork and civil work necessary to accommodate the furnace along with all build and commissioning activity. In addition, the client wanted a design that would allow them to utilize the waste heat from the furnace to provide heating to their facility.



Cooperheat designs and manufactures industry leading furnaces and ovens to a range of sectors including oil and gas, power, chemical, heavy fabrication, forging, foundry and any other industry where heating processes are required. With extensive global experience and expertise, Cooperheat offers unparalleled product excellence. Cooperheat has the expertise to supply a range of innovative and versatile furnaces and ovens specifically designed with the needs of the operator and industry in mind. This ensures we deliver tailored solutions to meet individual client requirements and specifications.

[Read more...](#)

Cooperheat's Senior Commissioning Engineer visited the site and discussed all of the technical aspects of their requirements with the client. Cooperheat's in-house Design Engineers then developed a detailed initial design that would fully meet the client's requirements. The design incorporated a state of the art furnace control system that would provide complete temperature control in all zones of the furnace.

Stork's HVACR Team assisted with designing a unique twin skinned flue that would incorporate a heat exchanger to capture the waste heat being generated by the furnace. This heat would normally go up the chimney into the atmosphere.

To ensure Cooperheat was up to the client's high standards, they sent a team of three Senior Engineers to visit our Southport facility in the UK to reassure themselves that we have the capability to produce the furnace. Subsequently, Cooperheat was awarded the contract in November 2019, and successfully completed and delivered the furnace in 2020.

Despite the significant global impact of the COVID-19 pandemic, Cooperheat safely delivered all parts of the furnace to the client's site in Croatia. [Read more about our Cooperheat services.](#)

STORK SEEN AS TRUSTED ADVISOR BY PROCTER & GAMBLE

How the Winner of Stork's 2019 Best Project Execution Award Revamped their Stagnant Account Execution into one of Excellence

Confronted by the Client in August 2017, Stork's Procter & Gamble (P&G) multi-site account was told they were "too comfortable" in their account execution. P&G outlined a framework of where they wanted account execution to go by 2020, which included Lean Construction and Integrated Project Delivery (IPD), and asked Stork's team – "Are you in or out?" With a resounding "YES, we're in," Stork's team, set to recreating themselves and how they executed their work. Stork's account director empowered his team to question "the way things have always been done" and take a close look at how and what they deliver to the customer. Simply buying new software or mandating use of a new process was not going to cut it- they first had to adopt innovation into their culture and mindsets. This meant thinking and approaching everything they did with more of a forward looking, real-time methodology driven by continuous improvement.

IAUDITOR – DIGITAL SAFETY TOOL

Their first move centered around safety and moving away from hard copy inspections, manual data entry, and stagnant HSE statistics. iAuditor by Safety Culture is a cloud-based, real time, intuitive tool that can be used to instantly record and review safety data, create assignments and corrective actions, and produce live leading indicators without changing the required inspection behavior. [Read more...](#)

COLLABORATIVE WORK ENVIRONMENTS: "THE BIG ROOM"

In a shift towards LEAN Construction and IPD (Integrated Project Delivery) execution, the Lima, Ohio site introduced the Big Room. It is a place where trade partners, Clients, and leaders from Stork's gather with the intent of developing, planning and managing, projects in a highly collaborative fashion. The Big Room provides a common ground, working environment for all stakeholders' needs, challenges, and deliverables to be addressed collaboratively, thus decreasing unnecessary efforts, roadblocks, and missed targets.

STRATEGIC PARTNER SELECTION

Stork developed a two-phase pre-qualification opportunity called the Site Trade Partner Selection to reduce the time-consuming bidding process for P&G's many projects. While the process takes time to execute upfront, the end results include trade partners identified for a year with automatic consideration without bidding out to the field (within parameters); significant back office savings and efficiencies; and a fostered positive partnership among valued stakeholders with incentive-based and risk-reward contract considerations.

INTEGRATED CONSTRUCTION & MAINTENANCE BUSINESS SYSTEM

Through a granular review of all their systems and processes,



Each trade partner receives an individually colored sticky note pad and breaks down tasks and schedules to a granular level, resulting in a kaleidoscope of intertwined deliverables.

Stork's P&G team identified nine critical components for truly successful integration – a new value offering called Integrated Construction & Maintenance (IC&M). IC&M increases capability, drives continuous improvement and promotes facilitation, servant leadership, and mentoring. Additionally, it led the Stork team to develop a cloud-based system utilizing a commercially available low code, database solution. This proprietary system centralizes and manages all project and operations information including workflows real-time cost management, reporting dashboards, and easily understood visual representations of data.

MULTI-FACETED POSITIVE OUTCOMES & SHARED BEST PRACTICES

The moves the Stork team has made have not been just about pure efficiencies. It has been about investing in people and teams as they strive to work more collaboratively and transparently. The Client continues to be exceedingly pleased with the group and Stork is seen now as a trusted advisor. Perhaps the best gauge on how the new culture is doing, the client wants a 3-year renewal with options for 2 more years afterwards. The Stork P&G team is already working to branch out and train on the IC&M framework and LEAN construction and IPD changes to their multiple other P&G sites and eventually bring the methodology to the greater organization.



WHEN SAFETY GETS AN EXTRA DIMENSION...

For many years, Attero has selected Stork as its preferred partner to take care of its annual turnaround. When COVID-19 emerged at the start of 2020, the project leader suddenly faced an unexpected additional safety factor. At Stork, however, they are accustomed to responding pragmatically and flexibly to unforeseen situations and did not hesitate to take on the challenge professionally. Canceling or postponing the turnaround simply wasn't an option.

Attero specializes in converting every possible kind of waste into energy and new raw materials, whether it's residual waste, packaging material or organic waste. Installations are shut down once a year for a major maintenance stop where, in the peak stage, more than two hundred people from various countries are at work on the plant. Stork takes care of these stops from the planning stage to commissioning and coordinates all external contractors. Stork provides boiler

maintenance services, NDT, valves, rotating equipment, plastic piping, electrical & instrumentation, and mechanical.

THINKING....

The 2020 maintenance stop is one that will not be forgotten for many years to come. Immediately after the start of the turnaround, COVID-19 shook the world. The maintenance process had just entered a crucial phase at the time and

canceling or postponing wasn't an option. At first, this created confusion all around, but this quickly turned into a co-operative attitude. Stork worked with the client to find the best solutions to continue and complete the work under responsible conditions. The pressure increased even more when stricter rules were enforced to stop the COVID-19 virus in its tracks. This hugely impacted the number of people who could be simultaneously present at the various sites, both in the plant and in the office, foreign-contractors accommodations and employee transport.

.... AND RESPONDING

Together with the client, Stork systematically visited all places where groups of people generally congregate and implemented appropriate measures. For example, additional space was made available for people to get changed, eating was done in shifts, and a clear route was indicated to make sure people wouldn't get in each other's way. Above all, though, all new information was clearly communicated through newsletters, leaflets and speaking directly with all people involved. Literally, by uniting strengths, the turnaround was completed without any delays. This to the client's satisfaction, who was extremely grateful to all parties and showed this appreciation with a memento of this remarkable turnaround.

Read more on Stork's approach on the new reality for assets owners [here.](#)

SOLIDARITY IS IN STORK'S DNA!

An impressive deed of solidarity was shown by colleagues from Peru and Colombia, who led a donation campaign early this year.

The initiative consisted of the donation of one day of their salaries to help those facing difficult times in these two countries. More than 500 employees participated in their contributions. Stork joined this initiative and donated twice the amount of money raised by employees.

In Colombia, the CSR team provided food and essential items to more than 20 communities where Stork is present, helping more than 4.400 families. In Peru, the money raised was given to employees in furloughs.





drives innovation; therefore, the Trinidad and Tobago office-team, facing this crisis like so many others, saw the opportunity to utilize technology as a viable solution. This gave life to a Virtual Safety Village (VSV); the idea was simple: 'if we can't bring them to the village, we will bring the village to them.' The Virtual Safety Village was developed and uniquely designed for craft- and project-specific workers. Through this online portal, team-members could participate in a mandatory onboarding program via any smart device (phone, tablet, laptop, desktop and on both Android and iOS platforms) on their own time. The 'anytime access' provision allows users to suspend their learning session and resume at their convenience, with their progress maintained where they left off.

VIRTUAL SAFETY VILLAGE

A great example of solution thinking: how Stork responds to COVID-19 and prepares and familiarises its team members with their tasks and safety measures without sharing a classroom. The effects of the global COVID-19 pandemic was undeniable. As a company, we had many obstacles to overcome, and business continuity strategies stretched further than ever imagined.

For every major project, a Safety Village is conducted to prepare and familiarise every project team-member with various project tasks and HSE considerations. This project onboarding exercise outlines the scope of work, roles and responsibilities, HSE- expectations and introduces the workforce to the project management team. These face-to-face sessions are held over two days; however, social distancing measures and various COVID-19 protocols meant this current format would be unsuitable for the upcoming projects. In collaboration with our clients, local teams were challenged to develop a reliable solution for this existing obstacle. Necessity

Virtual Safety Village users can navigate through:

- Project Scope Details,
- Life-Saving Rules,
- Task-Specific Details,
- HSE Risks and Controls.

Artificial Intelligence (AI) was used to voice-over content to accommodate persons with varying academic backgrounds. In addition to this, infographics and actual site visuals were included providing greater assurance of information reach. Knowledge transfer guarantees are provided through a series of quizzes, where the user, upon successful completion, attains a certificate of completion.

WHAT IS THE MOST EXCITING PART OF THIS DESIGN? ITS DYNAMISM.

This dynamic solution development is entirely editable to suit any project; anywhere and at any time. Multiple Virtual Villages can be built using the existing framework and platform with little IT competency requirements. Undoubtedly, this system provides a cost-effective solution, which adds value to any client and project.

CAMPUS STORK...A PLACE TO CONNECT, LEARN AND GROW!

Being the industry reference every day and everywhere is the ambition that moves us as a company to be better at what we do, always working towards excellence.

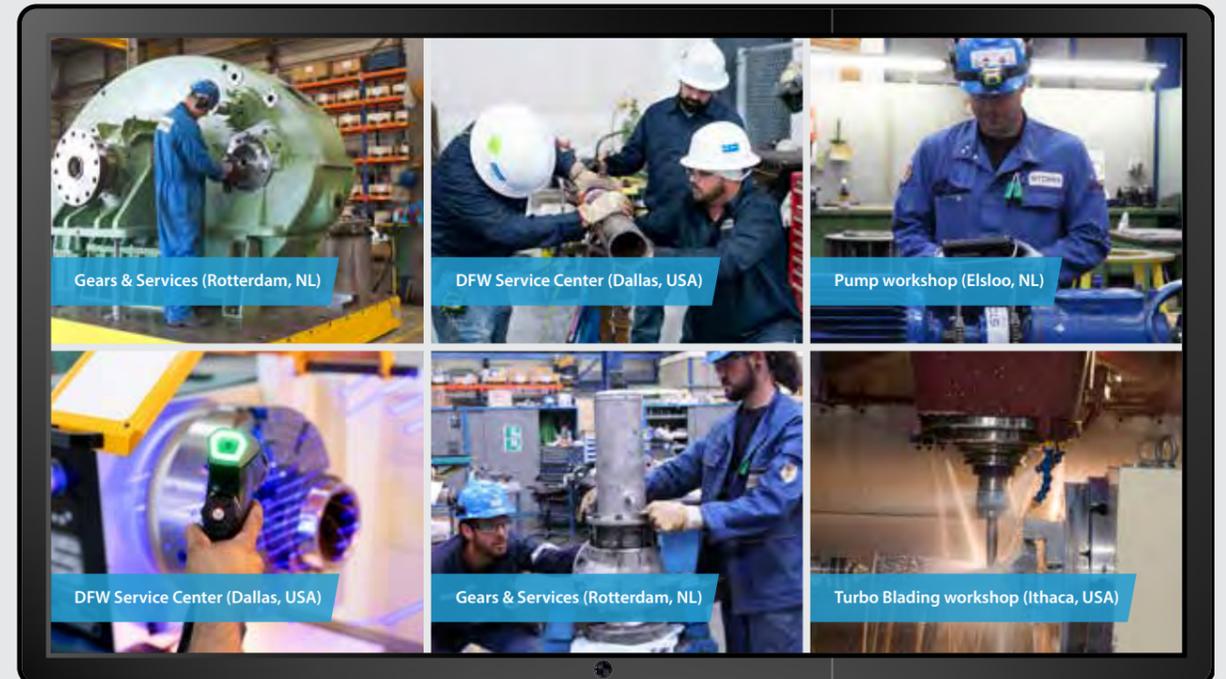
This is why Campus Stork was born: a corporate training and development program that seeks the promotion and generation of knowledge and good practices through collaborative learning spaces. From the beginning of 2020, Campus began to work on contents of training and development for Stork employees from Colombia and Peru in 4 pillars:

- **Be@Stork;** where each employee can learn more about the company.
- **Do@Stork;** with trainings related to technical disciplines and areas.
- **Learn@Stork;** where we work and develop soft skills.
- **Grow@Stork;** which includes our corporate development programs.

Although digital was always an element embedded in the program, it was associated only with the virtual programs available in our Employee learning platform.



Due to the COVID-19 measurements Campus Stork started its transformation and we launched the Online Experts program, which enables digital learning spaces for employees in the current circumstances. Committed to the development and growth of Stork's employees, Campus will continue to increase its portfolio of programs and content and invites those internal and external audiences with a shared knowledge to join and be part of the Stork expert program. [Read more on our shared knowledge...](#)



STORK EXPERIENCE EVENTS

Live-streamed, virtual facility tours, showing our capabilities all around the world. The new reality in the world has forced us to rethink the way we communicate with both, colleagues and clients. Travel, face2face meetings, conferences, trade-shows... how quickly they have become relics of the past!

Technicians in the field have embraced 'remote collaboration' as a new normal to connect with Subject Matter Experts (read more on page 19) who remain at home to get the information they need. But what about our clients? How can we connect with them – despite COVID-19?

"This is exactly the question I asked my team while we looked to wow our most important client," said Curt Lefferts, Executive Director responsible for the DFW Service Center. Stork opened a new Service Center in Dallas and was ready to invite clients to the facility to convince them to send pumps & gearboxes to the workshop, using our new local facility, when COVID-19 hit. We could have used flyers and brochures, but it is questionable if those messages would even reach their desks with clients sitting at home. And even if we did, why would they send work to our new Service Center with no references? So instead, we took a different approach. We contacted one of our large customers, where Stork is already providing many boots-on-the-ground services: **Vistra Energy**.

VISTRA ENERGY

This company is the largest competitive power generator in the U.S. with a capacity of approximately 39,000 megawatts powered by a diverse portfolio, including coal, natural gas, nuclear, solar, and battery storage facilities. But how to introduce them to our capabilities if we cannot show them in person? Building on previous experiences, we took a bold move and organized a truly

global Stork Experience Event, showcasing our full and global capabilities, coordinated from our new Dallas Service Center. The experience started with a 10-minute, live-streamed, virtual facility tour, allowing key Vistra representatives to see the service center from wherever they are, without the burden of travel. We then took them on tour around our global hubs of expertise, including brief virtual live stream tours of the Gears & Services workshop in Rotterdam (N.L.), the Pump workshop in Elsloo (N.L.) and the Turbo Blading workshop in Ithaca (N.Y.). Demonstrating that "yes, the paint might hardly be dry in Dallas yet, but decades of Stork knowledge is only one video-call away!"

The first of these Stork Experience Events held with a select Vistra audience resulted in enthusiastic reactions: "Please schedule another two of these sessions, and then we will invite the maintenance managers from all of our other sites across the U.S. as well," said the client. And: "Here are some pumps you can start to work on immediately!", resulting in direct orders for our new DFW service center.

The two additional sessions have since been held with over 100 key Vistra client representatives participating, and the steady flow of work orders has started to materialize. Watch this experience event [here..](#)

In second Stork Experience Event; SEEing is believing!, clients saw actual work, executed in the Dallas Service Center!



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