Fast movers in Monrovia

Construction team attacking waste in Indonesia

BAM’s double act in Aqaba
BAM International is a subsidiary of Royal BAM Group, one of Europe’s largest contracting companies active in construction, property, civil engineering, public-private partnerships, mechanical and electrical contracting, consultancy and engineering in 30 countries across the globe. BAM International operates outside Europe.

Until recently we were known as Interbeton or by the name of our subsidiaries, such as Harbourworks, Decorient and Higgs & Hill. Those names have been changed to include the BAM group name. Along with other companies in Royal BAM Group we benefit from the collective financial strength, know-how and experience that lie within our Group.

In today’s competitive market our goal is to exceed clients’ expectations, deliver on time and on budget and at the same time act sustainably and contribute positively to the communities where we work.

Dar es Salaam sets sail for growth
A major increase in airport capacity and a design inspired by traditional sailing boats: Tanzania Airports Authority commissions a third terminal at Julius Nyerere International Airport. More on page 30.

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Welcome to this seventh issue of View, our client magazine in its fourth year of publication.

Our intention with this magazine is to provide the reader with an insight into what inspires us: the variety and the challenges of our construction projects all over the globe and most importantly, our ambition to satisfy all our stakeholders.

It is them we have to thank for the success of the first phase of our strategic planning for 2015, the phase of growth. Now, with a healthy order book and new talent on board to help us fulfil our clients’ requirements it is time to enter the second phase: consolidation and refinement.

In the coming year, in addition to maintaining our growth, we will focus on improving our processes that help us carry out our business. We will also be working on development, for instance by offering our employees what they need for their personal and professional development in a sustained career at BAM International.

What you will be able to see in this issue is an overview of our current construction projects and a glimpse of what is in store for the future. Many of the articles show how themes such as safety and corporate social responsibility are integral parts of our business culture.

Innovation is another theme that runs through this issue, from the innovative work methods shown in the Al Ain stadium project to the range of special equipment that is being prepared for our new LNG projects in Australia. Both articles are clear examples of the commitment of our people to invest their talent and hard work in solutions to add value to the projects our clients entrust us with.

George Mazloumian,
CEO BAM International bv
African Minerals Limited, our client on the Pepel project, is rehabilitating its iron ore loading facility in Pepel, some 35 kilometres inland along the Sierra Leone river. Here, a joint venture of BAM International and Stefanutti Stocks has recently completed the second stage of its contract, the construction of a fuel unloading and layover facility. The first stage comprised the renovation of an existing iron ore export jetty, the construction of two mooring dolphins and 37 new navigation aid structures in the Sierra Leone river.

20% increase in shipping
Gypsum Integrity berthed at the new jetty at the end of March 2013. It signalled the end of a short but intense construction period of four months and the start of a production cycle that will enable our client to increase the export of iron ore by some 20% per day. While one transporter vessel lies berthed at the new jetty, another is being loaded at the rehabilitated ship loader jetty some 500 metres away. This means that changing times after departure of the loaded vessel have gone down from six hours to only one.

Feeding the chain of transport
The chain starts in the mine from which iron ore comes down in trains to Pepel by a 200-kilometre railway. Iron ore export takes place on a larger scale than any inland loading facility could manage, so the vessels that are loaded in Pepel act as intermediaries between the mines and the actual ocean transport. Each vessel that departs from the Pepel jetties sails 35 kilometres down the river to the Atlantic Ocean, guided by 37 navigation aids from the first stage of the contract. Once the vessels reach the coastline, it’s another 15 kilometres to the bulk carriers that lie anchored in deeper waters. There, the transporter vessels offload their 35,000 tonnes of iron ore into the 170,000-tonne bulk carriers for further transport, mainly to China.
The first vessel to berth at the new fuel unloading and layover in Pepel, Sierra Leone: Gypsum Integrity. Sailing under the Bermuda flag, the 197-metre bulk carrier signals the start of an increase in iron ore shipping of up to 20% per day.
Fast movers in Monrovia

A quick result on the final increase of capacity in Monrovia Container Terminal: the final stretch of quay wall was completed in record time. Project Manager Siewert Dob: ‘It’s due to lessons learned and the dedication of our people’.

Port activities on the heels of construction
‘I have seen the project at first hand change from the old wharfs into a new quay wall.’

Anybody who has seen the old wharf before work started and takes a peek now will be amazed at the change. Two new 200-metre berths for container or bulk vessels have been in operation since handover in July and December 2012. Now, the final 200-metre stretch of quay wall are in the last few metres of construction. The Freeport of Monrovia is ready to play its part in the recovery of Monrovia’s economy.

**Beating the time schedule**

The final phase of construction took only just over four months, which was significantly shorter than for the first two phases. One important factor was the weather, as the rainy season ended just before the final phase kicked off.

But the efficiency gains have also had a lot to do with good logistics and planning, based on lessons learned in the first two phases. This time round the distance between work fronts was brought down to a minimum. Also the team made sure that all materials were present in sufficient quantities, on site, before work started, and they made some changes to the sequence of work that minimised delays and duplication.

‘Ultimately, though,’ says Siewert, ‘the key to achieving our client’s goals and beating the time schedule is the dedication of our workforce, construction supervision and office staff. As Project Manager, I’m really proud of what they’ve achieved.’
Tanzam Highway — Section 4
(70 kilometres)
Location
Between Iringa and Malinga
Client
TANROADS
Engineer
COWI
Contract period
September 2011 – July 2013
Contract sum
€38.5 million

Safety is a major concern on a live road project. The Tanzam Highway rehabilitation project is full of effective solutions for safety. During the roadworks and after.
Work is drawing to a close on the rehabilitation of the Tanzam Highway, a major road in the East African transport system. It connects Tanzania’s ocean port of Dar es Salaam to neighbouring country Zambia. Together with its joint venture partner Per Aarsleff, BAM International is busy strengthening the carriageway and creating broader, paved shoulders to increase road safety.

**Final phase of a larger project**
The first phase of the project ended in 2011 when the first four sections were handed over. In addition to those first 150 kilometres, the joint venture partners are now working on an extension contract to rehabilitate another 70 kilometres.

A major impact on road safety will come from the extra width offered by the paved shoulders: in case of an emergency, drivers will have more room to avoid collisions without ending up in the soft soil. Also, on several steep hills extra width is being created for separate climbing lanes for slow traffic. Further safety measures include guardrails, signage and line marking. Very importantly, in those places where the highway passes through Tanzanian villages, speed is reduced through placing speed humps and pedestrian crossings are marked with zebra crossings.

**Simple but effective solution**
Safety during construction is another major concern, as the roadworks take place on a live road where traffic is indeed very lively. The simple but very effective solution is to work on one lane at a time, place barriers to cordon off the site and let a convoy vehicle guide all cars, trucks and buses along the open lane. The little yellow car that was bought for this purpose has proved a valuable investment!

**Local talent opportunities**
Between the current road project and previous infrastructural works, BAM International now has a ten-year presence in Tanzania. Over the years, many Tanzanian workers have entered employment with the joint venture and some have been able to climb the ranks. With a new project on the horizon (see page 30) they will hopefully be able to continue developing their talents.
‘The market is moving in the right direction’
It is estimated that Qatar will spend around $65 billion to prepare for the World Cup 2022, when some 500,000 fans are expected to descend on the country. Over and above World Cup preparations, Qatar’s growth is being fuelled by oil and gas reserves that account for more than 70% of total government revenue. The country is said to hold more than 5% of the world’s total natural gas reserves, which is likely to further impact on per capita GDP that currently ranks among the highest in the world.

BAM International has already made a mark on Doha’s burgeoning skyline with completed projects including the Al Bidda Tower – a 215-metre tall, 43-storey tower with an aggregated net rentable area of 41,500 m². Then there is the double-winged Al Hitmi commercial building, which has become a landmark on the Doha Corniche, and the 18-storey Al Hitmi residential building, consisting of 140 luxury hotel apartments. BAM has also recently completed a project for Lusail City – the newest planned city in Qatar, located on the coast 15 kilometres outside of Doha, which will eventually house up to 250,000 people.

McKinney has high hopes for BAM International’s further footprint on the sovereign Arab state’s development. ‘I think Qatar will be huge for us over the next ten years. Qatar could account for up to 50% of our turnover in two or three year’s time.’

BAM’s well placed to bid for World Cup 2022 stadia in Qatar

‘We’re bidding in the market at an all-time high, and aggressively, but prudently. We’re on a growth curve. We think the market is moving in the right direction,’ he adds. ‘We’ve already secured our turnover for 2013 but we want to push our turnover up, and of course, there’s work to be done for 2014 and 2015.’

And it may remain so for a long time into the future,’ he says. ‘If you take a number of projects there, these are major projects. We would look to Qatar as a huge opportunity.’

Big opportunities

‘We are currently bidding for two packages on the Doha Metro as a part of a joint venture with Besix and Midmac. One package is the Msheireb Downtown Doha development and Education City stations. The second is the Gold Line. BAM is well placed to bid for World Cup 2022 stadia work, having built Soccer City and Port Elizabeth stadiums in South Africa for the 2010 World Cup. We are also likely to see the private sector kick off, as many hotels will be needed to be built to accommodate World Cup visitors – some say the number of hotel rooms in Doha is set to double in the next two years.’

Apart from the opportunities arising in Qatar, BAM currently has live projects in the UAE, Jordan and Oman spread across marine and building sectors.

Area Manager for Middle East and Gulf States,
Patrick McKinney sets his sights on Qatar.
BAM International achieves full Pearl 2 rating on the Premier Inn Hotel project

Project of pride for BAM’s internal sustainability department

Bespoke sustainability rating
PBRS (Pearl Building Rating System) was developed as part of the Emirate of Abu Dhabi Urban Planning Council’s vision to green the built environment. It uses concepts and standards that run in parallel with globally recognised green building rating systems such as BREEAM and LEED. But furthermore it has been customised to address the unique and pressing issues facing projects in the Middle East, such as heightened need for water efficiency and cool building strategies.

Shared commitment to safety
Speaking with regards to the quality of safety implemented during construction, William Leeman, Property, Projects & Facility Manager, Premier Inn Hotels, says, ‘The project boasts an outstanding safety record which includes over one million man hours being worked without any lost time due to injury on site. This shows a team of well-managed employees committed to the safety of its team members. As Premier Inn is always conscious of its staff welfare, BAM International has shown great commitment to us as a client, to their staff and to the UAE.’

Premier Inn Hotel
Location
Abu Dhabi International Airport
Client
Premier Inn Hotels LLC
Contract period
February 2012 – April 2013
Contract value
€18 million

Going green  with grey water

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The Premier Inn Hotel project at Abu Dhabi International Airport is rated among the most eco-friendly in the Emirate of Abu Dhabi. The hotel's construction will be awarded a 2 Pearl in the Emirate's rating system for sustainability.

A wide range of innovative and efficient green building strategies in the construction of the Premier Inn Hotel in Abu Dhabi checked the boxes on enough credit points in Abu Dhabi's Pearl Building Rating System (PBRS) to warrant a Pearl 2 rating.

Green approach
Working closely with sustainability consultants and the Area HSE Manager for the Middle East/Gulf States, Fergal Kelly, in BAM International’s Dubai office, the project team created a comprehensive construction environmental management plan that accounted for dust control, noise, storm water runoff, and various other key performance indices.

The green approach also incorporated a waste management plan that allows for over 85% of construction and demolition debris to be recycled or salvaged. Low-emitting materials in the building interior contribute to a healthier indoor environment. To reduce the environmental impact of shipping, the team procured as many materials as possible from the local area.

Grey water
Now completed, the 300-room Premier Inn Hotel is the first in Abu Dhabi to recycle used water from its bathrooms, which is treated for reuse as ‘grey water’ in flushing toilets or watering the landscape. Additionally, solar collectors on the roof provide for 25% of the establishment’s hot water production and an evaporative pre-cooler to the air conditioning chillers further reduces energy costs.

BAM International is one of the few contractors in the Middle East to have its own internal sustainability department. This is a useful advantage when competing for new projects in the region, the majority of which have PBRS or similar sustainability requirements.
Maximising port capacity on the Jordan coastline

Gateway to

BAM’s double act in Aqaba, Jordan, continues: as the extension of the existing container terminal enters its final stage, the contours of a whole new port are taking shape on the coastline. Meanwhile, Jordan’s ambition may lead to further opportunities.

‘Pooled resources to fulfil Jordan’s ambitions’
Port capacity has already been increased at the Aqaba Container Terminal: in March, the first sections of new quay wall were handed over to the client – the very next day it was in operation with a first ship berthing.

Two more sections will be completed later this year, both adding another 130 metres of quay wall to Jordan’s cargo-handling capacity. The steady and speedy progress on the project illustrates the strength of the joint venture between BAM – focusing on the marine part of the project – and its local partner MAG, which is more in charge of the land-based side of the works.

A whole new port on the coast
Meanwhile, the contours of a brand new port are becoming visible on the coast a little further away from the city. Here, preparations for the breakwater are underway and tubular as well as sheet piles have been installed for the combi and anchor walls that support the berths. With ground conditions harder than foreseen in some places, the project team together with their on-site client representatives are currently working on a solution to bring all piles down to the required depth.

In addition to the on-going projects, both teams are looking to stay involved in Jordan’s ambitious plans for the future. As new bidding opportunities arise, they can offer the added benefits of pooled resources and a range of equipment that is already mobilised.

OHSAS audit: all clear!
Three BAM sites in the Gulf were the object of a thorough audit to obtain OHSAS 18001 certification in April: the two Aqaba sites and the stadium construction site in Al Ain. The auditors from Lloyds were perfectly satisfied with their findings: safety is up to standard and effective controls have been implemented.

Extra: drinking water for local school
As is the custom on BAM International projects, the Aqaba New Port has set itself several CSR goals. One of them has led to a side project of providing drinking water to a local girl’s school. At the moment, students and staff don’t have direct access to drinking water, but soon they will have a water tank and filtration system.
Unions give the thumbs up

‘BAM is clearly serious about health and safety’

Quay wall extension and wharf development
Location
Aqaba Container Terminal, Jordan
Client
Aqaba Container Terminal (joint venture of Aqaba Development Corporation and APM Terminals)
Contract period
June 2011 – September 2013

BAM sites comply with BWI Framework Agreements
The goal of the union’s visit was to verify the framework agreement that Royal BAM Group signed with BWI (Building and Wood Workers International) in 2006 to promote and protect workers’ rights and working conditions. BAM representatives accompanied the representatives of BWI and the Dutch union FNV.

Broad scope of inspection
The inspection focused on a wide range of issues, from salary, working hours and accommodation to health, safety and training opportunities. The delegates examined the sites and workers’ accommodation. They spoke to management, staff and labourers on site, and to the President of the Construction Workers Union in Jordan, who regularly visits the BAM sites.

Flying colours
Overall, BAM passed the inspection with flying colours. The inspectors said that it was clear, for instance, that BAM is very serious about health and safety. There was praise for the way this is organised at local and regional level and for the emphasis on creating an open atmosphere in which people are willing to report problems, discuss them and get them solved quickly.

Continuous improvement
Not satisfied with simply meeting requirements, BAM is always eager to improve further. The inspectors appreciated the continuous efforts of BAM to give something back to the community of Aqaba and to the local workers recruited there by offering extra training in technical skills, health and safety, or language.

Building and Wood Workers International (BWI) is an international organisation that strives to improve workers’ conditions in the construction, wood and forestry sectors. It promotes sustainable working life as a pre-condition for sustainable industrial development. Member organisations operate in countries across the globe, including Federatie Nederlandse Vakbeweging (FNV) in BAM’s home country, the Netherlands.

BWI’s conclusions:
- Employment is freely chosen
- No discrimination
- No child labour
- Freedom of association respected
- Right to collective bargaining respected
- Living wages paid (well above minimum wage in Jordan)
- Working hours not excessive
- Working conditions decent
- Safety representatives chosen
- Skills training provided
- Nurse and doctor provided
- Accommodation good and free
- Legal employment contracts
- Workers informed of the framework agreement
Hoist!

The choreography of stadium construction in Al Ain

Each truss weighs as much as a filled concrete truck
A striking architectural feature and a major technical challenge in one: the roof structure on the Al Ain multi-purpose stadium. Hoisting the first steel truss in place was the crowning event on an ambitious and innovative plan to save time.

Weighing no less than 25 tons, the truss was the first of 62 that support the stadium’s sprawling canopy. Due to its size, a truss like this would normally be brought to site in pieces and assembled after lifting. Not so on the Al Ain stadium, where time is of the essence. Here, the team chose to bring in a pre-assembled truss and hoist it up in one piece. This way, the work would not cause delays at lower levels.

The big day
The first lift would be the final test of the ambitious plan. Tension was running high on the big day. All movements had to be very carefully choreographed to prevent the steel structure – that weighs as much as filled concrete truck – from losing its balance.

Painstakingly precise
For safety reasons, a 350-tonne crane lifted the truss out of its jig in the same position as it was assembled. Once in open space the truss was lowered almost back to the ground. The work force rotated it slowly to its desired orientation and angles. Then the crane operator started the lift towards the sky. With continuous guidance from the erection team he positioned the giant steel structure over the final location and lowered it to the desired level. A few more tense hours of fine adjustments and then, finally, it was ‘mission completed’.

It was the most exciting milestone on the project so far, and a very helpful one in keeping the project on target for timely completion.

Proud of the team’s swift precision:
Paul Madden, Area Business Development Manager, and Project Director Maged Fares.

His Highness General Sheikh Mohamed bin Zayed Al Nahyan, Crown Prince of Abu Dhabi and Deputy Supreme Commander of the UAE Armed Forces, visited the site and named the stadium ‘Hazza Bin Zayed Stadium’ after Sheikh Hazza Bin Zayed Al Nahyan, National Security Advisor and Vice Chairman of Abu Dhabi Executive Council, as well as the senior vice president of Al Ain club. With Sheikh Mohammed are Khalid Abdullah Bin Shaiban Al Mehairi, Director General of the Executive Council (back left on the picture), Kareem Nagy Hassan, Chief Executive AAFAQ (back third left) and Mohamed Mubarak Al Mazrouei, Under Secretary to the Crown Prince Court (right).
Recycling initiatives on Indonesian hotel construction site

Margo City team attacks waste

Involvement from all: BAM Indonesia’s head office cheers on the recyclers.

Margo City Hotel
Location
Depok, West Java, Indonesia
Client
PT Puri Dibya Property
Contract period
July 2012 – March 2014
Contract value
€12 million
'We were digging up a lot of plastic waste during the excavation works,' says Project Manager Parlin Erickson, 'and we also realised that a construction site produces its own quantities of organic and non-organic waste. That is when we asked ourselves the question: Can we reduce the amount of waste and find ways to reuse and recycle?'

**Leading by example**

Parlin and the team felt that as many people as possible should be involved. So they included waste management in the project plan as a CSR target and started preparations for an event to raise awareness. Staff from the Jakarta BAM office and representatives of the client were also invited to take part. All of them together signed the poster of the waste management manifesto to show their support.

A highlight of the day was the composting session: all participants were keen to dig in and practice segregating compostable and non-compostable waste. 'This was fun,' says Parlin, 'and it helped to make us all enthusiastic about implementing the 3R principles “reduce, recycle and reuse”. This enthusiasm inspires us to encourage others to follow our example.'

**Making it work**

Practical initiatives on the Margot City construction site include the installation of a small-scale composter and a programme of waste paper and plastic collection. The plastic is donated to the Depok Sampah Center for plastic recycling. Compost from the project composter is available for free for staff and workers. The team is hoping to take composting to the next level by sharing both the compost and the composting knowledge with the local community.
Second line Holcim Cement Plan
Location
Tuban, North Java, Indonesia
Client
Polysius AG (general contractor) for client Holcim Indonesia
Contract period
April 2013 – December 2014
Contract sum
$37 million

Second Holcim contract signed as first tops out

Sparks fly in Tuban
BAM was awarded the subcontract for the construction of another 90 concrete structures, together forming the second production line of Holcim’s cement plant in Tuban, East Java. The increased capacity of the plant shows Holcim’s confidence in the continued growth of the Indonesian construction market. The East Java plant will be the third largest in Indonesia.

Cementing relationships
At the time of contract award, construction of the first production line was drawing to a close. The new subcontract further underlines the relationships between BAM, main contractor Polysius AG and Holcim. For many years, Holcim has been supplying cement for BAM’s Indonesian projects, including prefabrication of concrete elements at BAM’s West Java prefabrication yard. Here, Holcim built a special batch plant to keep production going.

With a workforce on the first production line that amounted to 1,300 at peak, BAM intends to re-employ and recruit workers from the local area as much as possible.

A second production line is already being prepared while BAM is building the first one as subcontractor of Polysius AG.

Topping-out party
Time for celebration: this February the East Java cement plant project reached its highest point when the highest platform of the pre-heater tower was cast at a height of 105 metres.

More numbers: at that stage, the project team had installed well over 14.5 million kg of rebar and poured more than 80,000 cubic metres of cement. The total number of structures on the plant’s first production line is 90, on an 88-hectare plot.
Jetty for iron ore transport
Location
Perak, Lumut, Malaysia
Client
Vale SA
Design
BAM Infraconsult and SKM
Contract period
August 2011 – August 2013
Contract value
€160 million

Pulling

An armada of pile barges, crane barges and other floating equipment, piles in excess of a hundred metres in length and a hundred tons in weight, a workforce of 900 at peak ...
Nothing but the biggest numbers on this Malaysian project.
’All in all,’ says Project Manager Tom van Breda, ‘we are driving over 830 piles, with varying diameters between one and almost two metres. Two prefab yards are busy producing the 9500 prefab elements – a total of 70,000 cubic metres of concrete. All elements weighing more than 45 tons are being produced on a site in Lumut. The heaviest weigh some 120 tonnes. The lighter elements are brought in from the capital Kuala Lumpur.’

**Iron ore transhipment**

Brazilian mining company Vale has chosen Lumut on Malaysia’s west coast as its transhipment location for iron ore. The raw material is brought in from Brazil in gigantic bulk carriers some 360 metres in length. Conveyor belts transport the ore to shore, from where it is distributed to smaller ships for further transport to various countries in the region. BAM International, in joint venture with its Australian partner McConnell Dowell and local company Sys, is responsible for the design and construction of the ore vessels’ offloading facility. The project comprises the construction of an 1800-metre-long access trestle that stretches like an umbilical chord between the shore and an angle-shaped transfer platform, which finally leads on to the import jetty. The design was provided by BAM Infraconsult and SKM.

**Working round the clock**

Van Breda: ‘Two major milestones are the pillars under the contract. First, the cranes to offload the bulk carriers need to be placed on the import jetty on 1 June. And secondly, the handover of the complete project on 1 September 2013. To make them both happen we are taking all the necessary measures, such as pouring concrete at night – with an added safety advantage: the sheer number of floating equipment might otherwise create a risk of disciplines getting in each other’s way.’
I first came across BAM when they were working in Papua New Guinea in the Joint venture with Clough. I was working in the CJJV joint venture who awarded the contract for the jetty construction to BAM Clough Joint Venture. One of the significant factors that led to the award was the innovative construction method that was very environmentally friendly. The Cantilever Bridge was manufactured for the project and worked well from the time it was launched. Minimising the damage to the mangroves and being independent of the state of the tides in an area with a long expanse of shallow water. The safety culture was very good throughout the time that I was there and the whole team of both expatriates and PNG Nationals worked well together to ensure the project was executed safely. Although I left that project prior to the completion of the trestle, I have heard how well the work continued up to completion.

I was assigned to lead the JKC joint venture for the implementation of the Ichthys onshore LNG facilities about 18 months ago. One of the first things I noticed was that there were mangroves and trestles and two jetty heads and I wondered if similar construction methods could be adopted. Upon joining the project I found, perhaps unsurprisingly, that BAM Clough were on the tenderers’ list for the design, procurement and construction of the jetty. I was delighted to find that there was a proposal by BAM Clough to use the same cantilever bridge system that was adopted in PNG for part of the works.

To cut a long story short, BAM Clough have been successful in obtaining not only the contract for the jetty construction but also the Module Offloading Facility which represents all of the marine facilities. The work is in the design and procurement stage but soon the mobilisation of the marine equipment will commence. I look forward to renewing the relationship with the professional team from BAM Clough and developing a similar safety culture that was evident in Papua New Guinea so that the project can be executed with nobody getting hurt.

Esso Highlands Limited proclaimed the BAM Clough joint venture ‘Subcontractor of the Year’ on the LNG project in Papua New Guinea (PNG).

Esso Highlands is a subsidiary of Exxon Mobile. It operates the PNG LNG gas production and processing facilities in Port Moresby on behalf of Exxon Mobile and its co-venturers. Its activities are expected to provide a long-term supply of gas to major Asian clients and to provide long-term sustainable benefits to Papua New Guinea. The announcement of the award came at a sponsor’s workshop organised by Esso Highlands. It was received as a tremendous recognition of the project team’s hard work, persistence, support and respect for all.

BAM Clough will complete the LNG and condensate offloading jetty in a subcontract with main contractor Chiyoda JGC Joint Venture EPCM in a few months.
BAM Indonesia precast yard productive and safe. And growing.

While casting its final concrete units for the Australian Gorgon project, BAM Indonesia’s precast yard in Cilegon, West Java, is doubling in size in order to accommodate production for further Australian projects. The growth of the precast yard follows after a series of projects casting concrete elements in compliance with the toughest Australian quality and quarantine requirements – including those of projects taking place in Class A nature reserves.

This February, the precast yard achieved 500,000 project man-hours without any lost time injury, marking a considerable improvement in personnel awareness to create a safe workplace. This achievement underscores BAM’s commitment to ensure everyone goes home without harm, in line with BAM’s “Safety Starts With Me!” motto.
Bespoke modifications on a purpose-built jetty constructor

The jetty champ

It finished the job in Papua New Guinea, now it’s being prepared for a wholly different one in Australia: BAM Clough’s self-owned, self-designed and self-built jetty constructing champion, the cantilever bridge.
The first job for the cantilever bridge was the construction of a 2.4-kilometre jetty connecting the PNG LNG on-land facility with its offshore loading berth. Purpose-built for this project, it worked on a principle of projection: piece by piece it built the supporting structure for the jetty, each time pulling itself onto the newly created stretch to start driving piles for the next one.

Second incarnation
The next destination is the Ichthys LNG project, the largest oil and gas project in Australia’s Northern Territory. Here, the cantilever bridge will again be used to build an LNG jetty, but this one has a different construction philosophy. In Papua New Guinea, the jetty moved swiftly on while the skeleton structure was being filled in from floating crane barges. No floating equipment will be involved on the Ichthys project, so the second incarnation of the cantilever bridge will also accommodate the finishing stages of construction.

Re-built by the SEAT team
The cantilever bridge is currently in Batam, Indonesia, where a specialist team is carrying out the bespoke modifications to prepare it for its second job. This Special Equipment Australia Team (SEAT) is adding many new features such as extra piling templates (so that trestles can be built on either side of the bridge) and new platforms for the finishing stages. Also, with the new functionality and the new location come new safety precautions that they’re implementing.

Perfecting the design
The SEAT team, while overseeing the modifications in Batam, Indonesia, is also performing rigorous hands-on tests of working methods on the Ichthys project. Jan Reijerkerk, one of the engineers on the team: ‘After the first stretch of 672 metres, the cantilever bridge will be taken apart and assembled again along the jetty junction for a second stretch of 600 metres. What better place and time to test this than here and now?’

Any changes to the modifications design from this testing and from additional client design notes are related to BAM’s in-house designers in the Netherlands. All new solutions are of course implemented before the cantilever bridge leaves for its new destination.

More innovations
The Ichthys project will see many more new and modified pieces of BAM equipment, some of them especially innovative, including:

- a beam placing unit, which is self-propelled and capable of transporting and placing large concrete beams. This unit will fill out the skeleton structure created by the cantilever bridge. It combines the strength of a gantry crane with the movability of a self-propelled modular transporter;
- a self-climbing cell template, which provides a guide for precise placement of sheet piles and at the same time provides rigidity during construction in rough coastal waters. This cell template will be used on BAM’s second contract in the overall Ichthys project, the construction of a module offloading facility.

Parallel to the preparations for Ichthys, the SEAT team is building a second cantilever bridge for the construction of a jetty on the Australian Wheatstone project. This too will contain modified elements from the original cantilever bridge.
The new terminal is designed to accommodate anticipated growth of international air traffic. It will be built in two stages: the first one creating capacity for 3.5 million passengers per year, the second one extending that to 6 million. The scope of the contract comprises the terminal itself and associated works such as parking lots, access roads, platforms and a taxiway. Total execution period for the project will be 36 months including 6 months for design.

Partnerships...
A special touch in the architectural design of the terminal is the roof of the terminal, which takes inspiration from the traditional sailing boats that can be seen crossing Tanzania’s coastal waters.

The design and construct contract will be carried out by a joint venture of BAM International and our UK sister company BAM Nuttall, with a third BAM company, BAM Advies & Engineering from the Netherlands, as one of the design partners. Also involved in the design is NACO, Netherlands, Airport Consultants.

Opening Terminal 3 for international flights will also free up capacity for domestic flights in the existing Terminal 2. BAM International is no stranger to this part of the airport: in 2006 and 2010 we completed the two phases of a major renovation project of the airport’s infrastructure. This involved rehabilitations of the main runway, all taxiways, air ground lighting and Terminal 2’s apron, the area where aeroplanes are parked.

Airport experience
Apart from Julius Nyerere International Airport, BAM has been involved in the construction, extension or renovation of many others, including Schiphol and Eindhoven in the Netherlands, Terminal 2 Munich and Berlin Brandenburg in Germany, Zaventem and Charlerois in Belgium, Cork in Ireland, Bristol, Newcastle and East Midlands in the United Kingdom, Harare in Zimbabwe and Sheikh Rashid terminal in Dubai, United Arab Emirates.

More capacity for Tanzania’s major airport: Tanzania Airports Authority recently awarded BAM a contract to design and construct a third terminal at Julius Nyerere International Airport in Dar es Salaam.

Up to 6,000,000 more passengers per year
Construction could commence on the 320-metre-long quay wall in Limbe, Cameroon, after the completion of the detailed design by BAM International’s sister company BAM Infraconsult. The wall will consist of a concrete foundation and ten layers of concrete blocks reaching down to a depth of 12 metres. The crest, consisting of a concrete finishing beam, will stand 4.2 metres above sea level. All concrete elements will be cast locally in our prefab yard. The design is based on the type of quay that is often used in rocky locations in Africa and the Middle East.

BAM Infraconsult completes Limbe Shipyard quay design

The municipality of Abu Dhabi City has awarded BAM International the Approval Certificate for the Abu Dhabi Environment, Health and Safety (EHS) Management System from the Department of Municipal Affairs. Mr. Abdulaziz H. Zurub, EHS Division Manager presented the award at a ceremony in the Municipality Building of Abu Dhabi to Patrick McKinney, BAM International’s Area Manager Middle East/Gulf States. He complimented BAM International on the Integrated Management System and the overall standard of health safety and environment within the company.

Approval Certificate

A BAM International team attended LNG 17 in Houston, USA, to meet up with existing and potential clients and partners in the global LNG sector. Key speakers from major private and public parties attracted over 5,000 industry professionals from over 80 countries in the biggest global gas event of the year. The LNG sector is and will be growing in the next years to come. Major developments near the East African Coast and the West Coast of North Americas will bring marine infrastructure opportunities of interest to BAM International. For more information, please contact Maikel Jagroep, m.jagroep@baminternational.com or +31 182 590478.

LNG 17 conference and exhibition in Houston, Texas

Double-digit growth is expected in Panama, with the expansion of the Panama Canal lock system as its major catalyst. The extra capacity will strengthen the country’s position as a regional distribution centre and a hub for global trade – thereby projecting Panama into the ranks of emerging economies. An excellent opportunity for Dutch business – and the port of Rotterdam, the largest in Europe – to learn more about Panama’s potential and seek partnerships. A Dutch business delegation led by the mayor of Rotterdam, Mr Ahmed Aboutaleb, visited the country on a weeklong trade mission. BAM International was one of those companies. A team of Corporate Business Development and Area Americas met with representatives of the Panamanian government and business community. For more information just send an e-mail to Leo van Druenen at info@baminternational.com or phone +31 182 590371.

The Panama potential
Worldwide construction in full View:

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