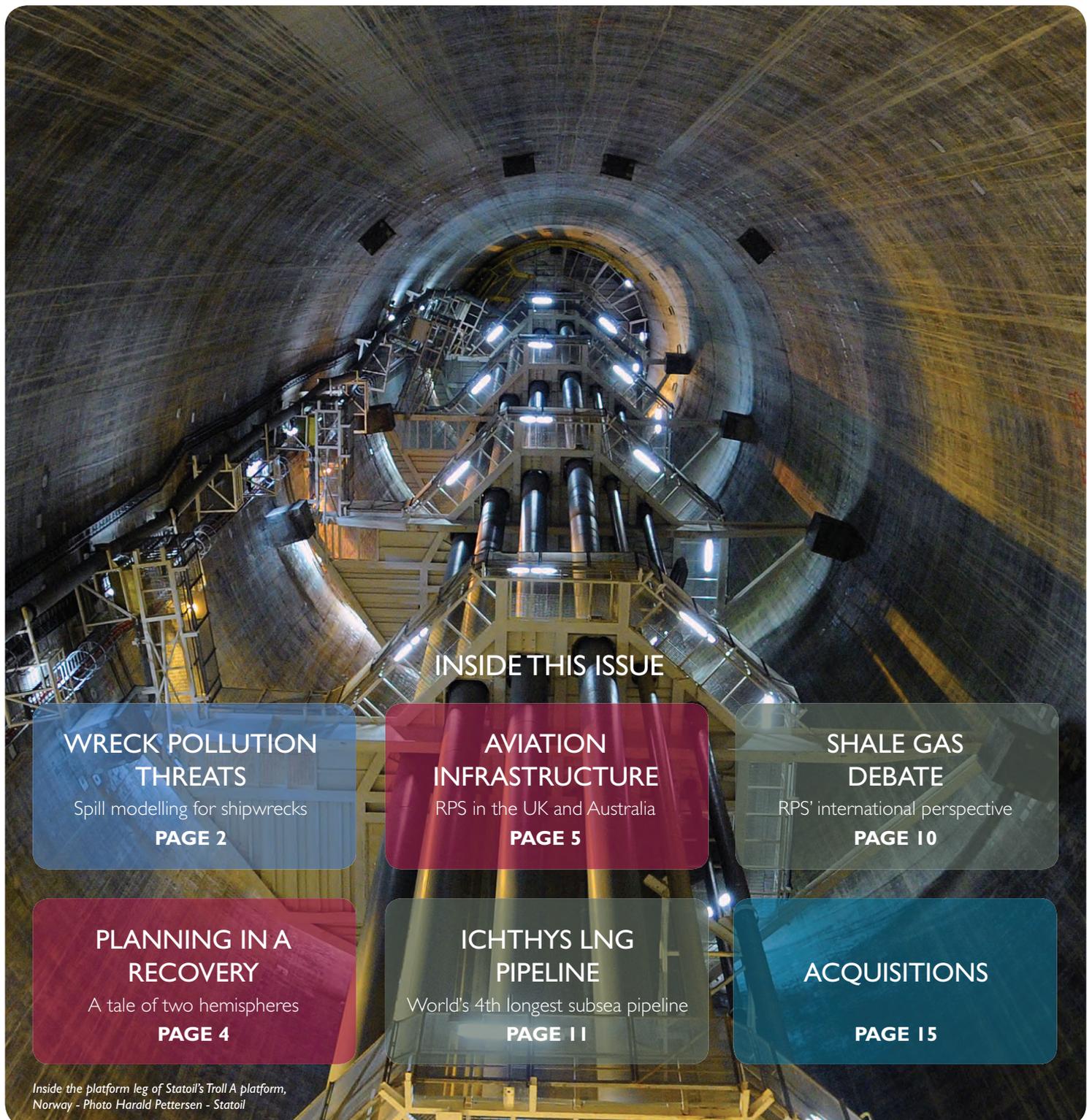


elements

NEWSLETTER OF RPS GROUP PLC

MARCH 2014



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Inside the platform leg of Statoil's Troll A platform, Norway - Photo Harald Pettersen - Statoil

MODELLING OF SHIPWRECK POLLUTION THREATS

Of the approximately 20,000 known shipwrecks in US coastal waters, many still contain significant volumes of oil, potentially posing substantial pollution threats.

The National Oceanic and Atmospheric Administration's (NOAA) Remediation of Underwater Legacy Environmental Threats effort aims to prioritize potential threats to coastal resources and assess the wrecks' historical and cultural significance.

As part of NOAA's multidisciplinary project team, RPS conducted oil spill fate and effects modelling for 87 high priority wrecks in different marine, coastal, and freshwater environments including the Atlantic Ocean, Gulf of Mexico, Pacific Ocean, Arctic Ocean, Great Lakes, and Caribbean Sea. RPS used its SIMAP stochastic model to get accurate measurements and analysis. The results provided statistical likelihoods and magnitudes of spill related impacts in the event of a release. RPS also developed regression models to estimate impacts as a function of spill volume.

NOAA's national report detailing the results identifies 36 sunken vessels as posing an oil pollution threat and recommends 17 vessels for further assessment and potential removal of oil.

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Sea Tiger Shipwreck off Honolulu



SONGS AND SIGNS FROM THE DEEP



There is growing global concern about anthropogenic sound in the oceans (such as from shipping and seismic exploration) and its potential negative impacts on marine wildlife, particularly cetaceans - which use sound to communicate, navigate and locate prey.

Seismic processing and acquisition techniques can now include multiple vessels working in formation: 'wide-azimuth', magnifying the sub-sea acoustic footprint. The use of airgun (source) arrays during marine seismic acquisition is a significant element of marine hydrocarbon exploration. The arrays emit sounds at repeated intervals throughout the survey - which can last several months. Many parts of the world have implemented guidelines and standard operating procedures mandating the exploration permit holder to comply with regulations mitigating marine environmental effects of seismic activities. Mitigation has two approaches: visual and acoustic. The more scientific and comprehensive technique usually employed is Passive Acoustic Monitoring (PAM), which complements visual observations and provides mitigation coverage during impaired visibility. PAM uses towed cable(s) with embedded hydrophones capable of detecting cetacean vocalizations in both the low and high frequency range.

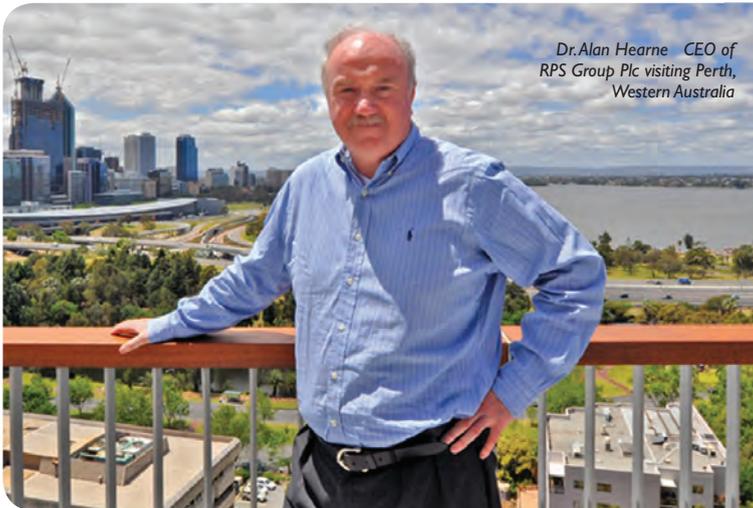
Protected Species Observers (PSOs) or PAM Operators must be able to quickly identify animals accurately to species group, under varying climactic conditions in order

to implement necessary source mitigation. Experience in making distance evaluations to protected species is essential: based on animal position, or vocalization strength. Where marine mammals are identified in the vicinity of the seismic source the result is often complete operational shutdown, and as such the PSO and PAM operators' role is an important one with respect to ensuring accuracy and confidence.

The Gulf of Mexico has one of the world's most regimented data collection and reporting requirements: where PSO reports for the regulator must compile visual and acoustic effort data, source operations, visual and acoustic detections of protected species, including all marine mammals and sea turtles alongside other wildlife data such as bird, fish and marine invertebrate observations. Accuracy is vital. During the last five years in the Gulf of Mexico alone RPS has submitted over 2,800 regulatory PSO documents to the federal government on behalf of clients and consistently has over 80 PSO associates deployed.

RPS has brought together over 200 associate biologists or PSOs with the appropriate certification and training to assist clients effectively. In conjunction with the PSO certification course, we have also developed a bespoke PAM operator in-house training program.

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*Dr. Alan Hearne - CEO of
RPS Group Plc visiting Perth,
Western Australia*

Welcome to the latest edition of our newsletter. It has become clear that many RPS staff share the stories it contains with our clients and others interested in our business. We have, therefore, changed its name from *In House* to *elements*. It still contains stories and information which demonstrate the extraordinary range of skills and experience our 5000 colleagues possess.

Our mix of activities in the energy, energy infrastructure, environmental management and urban development markets positions us in sectors at the forefront of the global recovery. 2013 was a successful year for the Group. During it we invested significantly in developing our global business and are well positioned to continue our success in the future.

Enjoy reading this and let us know what you think of it.

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CANADA CONSENTS ENBRIDGE NORTHERN GATEWAY

RPS has provided expert witness testimony to a Joint Review Panel (JRP) of Canada's National Energy Board and the Canadian Environmental Assessment Agency for the proposed \$6.5 billion Enbridge Northern Gateway, a scheme which could bring a projected \$270 billion increase to Canada's GDP over 30 years. RPS also provided landowner consultation and land survey clearance; the environmental programme and providing strategic advice on the environmental assessment; Aboriginal consultation; route selection advice and the regulatory strategy for the project.

Until now the only route to market for 99% of Alberta's crude oil has been through the US, so Canada's most valuable natural resource has been historically under priced. When Alberta's heavy crude sells for \$30 a barrel, US light crude sells for \$60 a barrel. Moreover the world oil price can be much higher outside North America.

The solution developed by Enbridge Pipelines Inc is to provide Canada with direct access to

markets in the Pacific Rim with twin pipelines running 1,177km from northern Alberta across British Columbia to a deep water port facility at Kitimat. A 36" pipeline will carry up to 525,000 barrels of oil per day from Alberta to port and a 20" pipeline can carry 193,000 barrels of gas condensate per day inland, some of which can be used to thin Alberta's heavy crude.

What was seen back in 2004 as an obvious project to connect Canada's oil to international markets soon became a cause célèbre pitting predominantly environmental non-governmental organisations, First Nations and interested individuals against the project. The National Energy Board responded with an intense regulatory process and the establishment of the JRP in December 2009.

After extensive planning, consultations, reviews and revisions, a proposed pipeline route has been identified using old forestry roads, cut blocks and other existing disturbances so that 70% of the proposed route would utilise previously disturbed lands to minimise

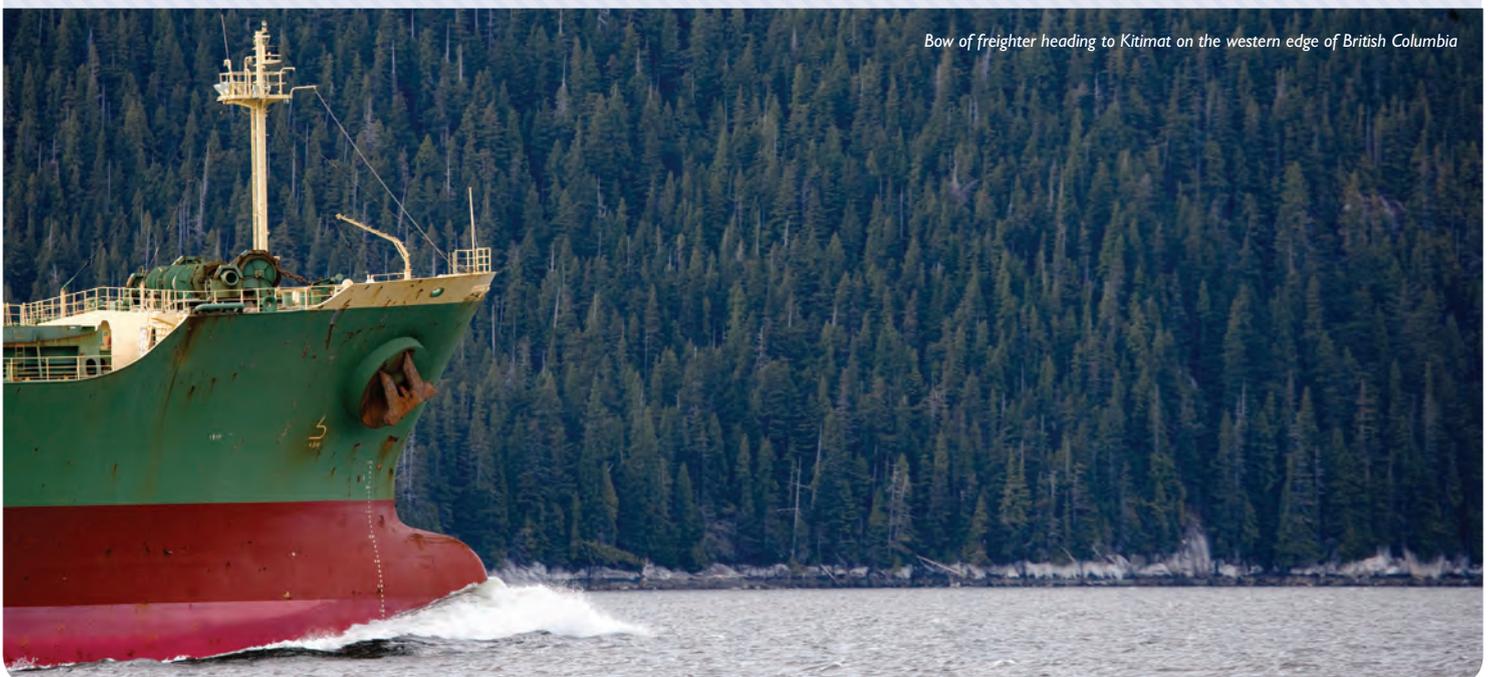


Paul Anderson (president RPS HMA) and John Carruthers (President, Enbridge Northern Gateway Pipelines) providing expert witness before the Joint Review Panel for the proposed Enbridge Northern Gateway scheme

impacts on the terrain, waterways, wildlife and neighbouring communities. More than that, the design of the pipeline has been a model of world-class safety and environmental standards.

In December 2013, after reviewing 175,669 pages of evidence and hearing 884 hours of oral statements, cross examination and final argument, the Joint Review Panel recommended that the Federal Government in Ottawa approve the project with 209 recommended conditions of approval.

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Bow of freighter heading to Kitimat on the western edge of British Columbia



Westfield Shopping Centre in Stratford City, London, UK – one of our recent planning successes. Image courtesy of Westfield Group.

UK PLANNING CONSULTANCY AS THE RECOVERY GETS UNDERWAY

By economic indicators and client interest, the UK is out of recession though clear positive growth remains sporadic.

The retail sector has long provided a steady stream of work though its main drivers are now shifting focus with a saturation of food shopping, and the internet taking the lead in many consumer categories. Retailers are configuring their estate accordingly, with a trend for fewer, smaller and more diverse stores emerging.

Residential development is the crucial driving force behind the current general economic recovery. The buoyancy in the residential sector that has been prevalent in the capital has begun to spread outside, with Help To Buy and lower interest rates stimulating the market. There is real action in the market for development sites, with new players vying with the established house builders.

Local government inconsistency in keeping pace with the market is creating a number

of opportunities to deliver off development plan sites as well as realise allocations in LDFs. RPS has helped secure recent successes for Barratt in Somerset, Redrow at Holsworthy and in Bristol for Linden, and is advising on 1200 homes in Cardiff and up to 1700 in Gloucestershire.

Government initiatives to boost investment and reduce constraints have had visible effects, but also raise fears of creating another housing market bubble. Though too soon to judge it is clear that the needed quantum of new housing can only be achieved through major change to the planning system. The efficacy of a new round of town/garden city developments is being promoted by government, but differences on how to plan this might impact on progress. As some shop units remain in long-term vacancy we must plan for the possibility of residential values exceeding retail ones with potential wide-scale residential redevelopment on the fringes of retail centres.

A new tier of regional planning to be introduced with a Planning Bill by 2015 in Wales (as well as changes to the whole development management process) will bring radical changes – potentially with local authority merges creating new Local Planning Authorities dealing with a new planning system, as well as Welsh infrastructure decisions being made by Welsh Ministers.

Planning consultancy has always been marked by constant change. The most successful consultancies are those which first identify the market trend which define new areas of consultancy, and that is where RPS sets its target.

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DEVELOPMENT IN AUSTRALIA BEGINS TO RECOVER



Recent planning successes for RPS in Australia: Bahrs Scrub Road masterplan, Brisbane (above); and Caloundra South, Sunshine Coast (below).



Despite the downturn in the resources sector in recent years, Australia is feeling more optimistic – with a recent survey by the Property Council of Australia and ANZ Bank showing an increased confidence in the Australian property sector. A modest improvement is expected for non-residential construction in Queensland amidst a boost to the state's tourism, and New South Wales is seeing an increase in residential construction with more state government capital expenditure on large infrastructure projects.

The housing market is cautiously but confidently improving, with the long term issue of residential affordability – particularly for first time buyers – eased slightly by an extended period of low interest rates. As demand has outstripped new homes supply in recent years, this has continued to buoy the sector. The conscious effort being made to reduce red tape in planning applications is welcomed by many of the developers although the capacity of local governments to implement this most efficiently remains an industry talking point.

RPS continues to work closely with long-term client Bunnings Warehouse in the continued \$850m roll-out of stores nationwide that has now also extended to Western Australia. We are also currently advising Lend Lease on its largest masterplanned Queensland estate – over 10,000 residences at Yarrabilba between Brisbane and the Gold Coast.

Our offices in Australia have particularly noted Greenfield estate clients bringing new stages of development online sooner, or expanding stages to better meet demand. There has been higher demand especially for infill development sites in Brisbane, and also in Sydney, focussed by several major transport infrastructure projects. Meanwhile we are experiencing more major retailers looking to expand their networks as the economy improves, and an increase in developers seeking our help on due diligence and strategic advice for site acquisitions.

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GLOBAL DELIVERY ON AVIATION INFRASTRUCTURE

The last year has been very positive for RPS with a number of high profile projects covering all aspects of aviation sector operations, completed successfully and marked by accolades from Government, peers and the Airport Operators' Association (AOA).

Aviation is a hugely important sector for any country through supporting employment and facilitating a range of goods and services. In the UK, despite challenges ahead, the aviation sector is in a better position than three years ago, and we have assisted several major airports to develop and improve.

This has been achieved through our unique feature as having leading aviation experts in planning, environmental and design disciplines working together to deliver a final positive result: providing tailored solutions globally that help airports combine their commercial goals with the needs of the environment and the local community.

Our recent achievements include: completion of major infrastructure improvements at Guernsey Airport ahead of schedule (formally recognised by the island's government and the client); Best Environmental Initiative Award from the AOA for our continued work at London City Airport (LCY); and delivery of a high tech

aircraft maintenance facility for Monarch Aircraft Engineering Ltd (MAEL), at Birmingham Airport. Our specialist UK and Australian aviation teams are working collaboratively on aviation marketing initiatives in Australia, including discussions on new runway developments and masterplanning at the country's regional and business airports, with the UK design team supporting the Australian planning, environmental and project management teams with a continuous 24 hour operation.

RPS is appointed to Gatwick Airport Ltd's Engineering Design Framework and will continue to provide strategic planning and environmental services in connection with the airport's long term proposal to the UK Airports Commission for their second runway (post-2019), following recent extension of our existing appointments with the airport.

We are also appointed to Southend Airport's new terminal extension to enhance its service offering, following completion of the initial terminal design by RPS; and to the continuation of masterplanning and detailed designs for the 91 acre logistics hub at Manchester's Airport City Enterprise Zone for MAG.

It's been a remarkable year and thanks to all those who contributed to these ongoing successes.

Iain Rawlinson, Executive Chairman of Monarch, unveils the new aircraft maintenance hangar at Birmingham International. Designed by RPS it can accommodate two Boeing 787 Dreamliners.



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RPS AND GT LOGISTICS

GT Logistics in Port Arthur, Texas, is a \$95m transloading terminal to off-load marine crude oil for transport to refineries by train and barge - relieving crude surpluses in the US and Canada without access to a pipeline. The 110 acre site is located close to some of the country's largest petroleum refineries and is ideally positioned to supply increasing demand. With over eight miles of railtrack, it can host up to 250 cars and off-load up to 100,000 bpd of oil.

Because of the urgency of relieving the oil surplus, RPS had to move quickly to assist in securing air, water, and waste permits within a network of federal, state and local regulations. The facility's proximity to much of Texas' refining and petrochemical capacity on the gulf coast: located in a benzene watch area, surrounded by sensitive wetlands, and bordered by a major intercoastal waterway; added to the challenges of securing permissions for a large-scale industrial operation.

RPS Engineers and Environmental Scientists used creativity and technical expertise to craft pollution control and compliance strategies underpinning the successful permit applications. GT Logistics is now planning for a series of petroleum storage tanks, and a 17-acre deepwater dock on the Sabine-Neches Waterway nearby: both associated with the crude terminal - setting the stage for us to further assist in establishing new permitting protocols and compliance strategies.

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THE ECOLOGICAL CHALLENGES OF RAISING ABBERTON RESERVOIR

RPS has advised on a number of challenging ecological matters for Essex & Suffolk Water's Abberton Reservoir in the last ten years including waterfowl management, underwater plant surveys and tackling invasive species.

After over a decade of planning and preparation the reservoir depth is now to

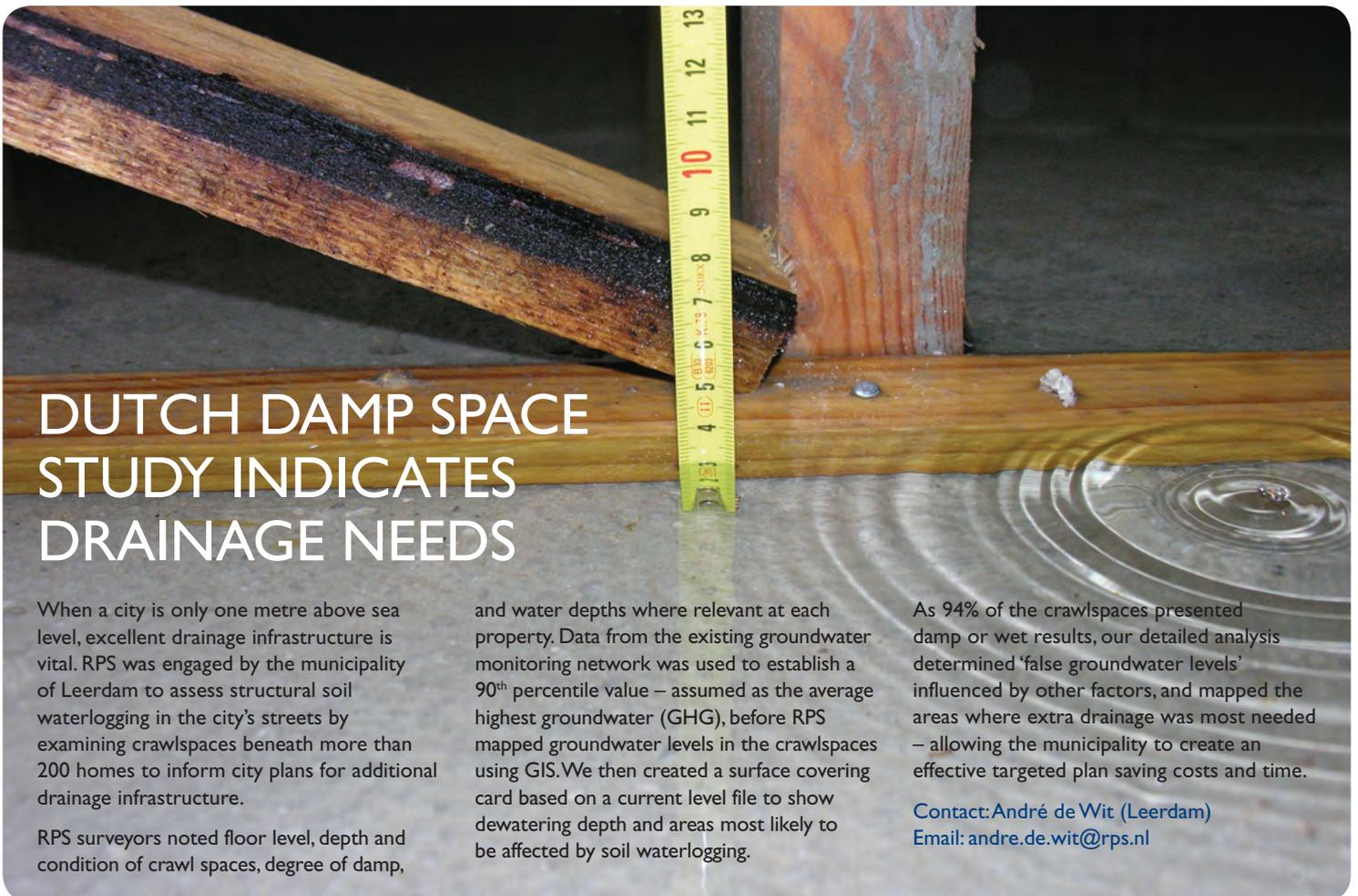
increase by 3.2m, doubling its capacity to 41bn litres to maximise efficient water management. RPS, in cooperation with the Essex Wildlife Trust's volunteer force, has identified, trialled and prepared a locally sourced seed collection to kickstart the vegetation of the reservoir's 16km long shoreline – on a former concrete

apron. Millions of seeds from 15 plant species will help to stabilise and protect reservoir margins while providing wildfowl food and creating suitable invertebrate habitat.

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Winter evening bird migration Abberton reservoir



DUTCH DAMP SPACE STUDY INDICATES DRAINAGE NEEDS

When a city is only one metre above sea level, excellent drainage infrastructure is vital. RPS was engaged by the municipality of Leerdam to assess structural soil waterlogging in the city's streets by examining crawlspaces beneath more than 200 homes to inform city plans for additional drainage infrastructure.

RPS surveyors noted floor level, depth and condition of crawl spaces, degree of damp,

and water depths where relevant at each property. Data from the existing groundwater monitoring network was used to establish a 90th percentile value – assumed as the average highest groundwater (GHG), before RPS mapped groundwater levels in the crawlspaces using GIS. We then created a surface covering card based on a current level file to show dewatering depth and areas most likely to be affected by soil waterlogging.

As 94% of the crawlspaces presented damp or wet results, our detailed analysis determined 'false groundwater levels' influenced by other factors, and mapped the areas where extra drainage was most needed – allowing the municipality to create an effective targeted plan saving costs and time.

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DETAILED DIGITAL TERRAIN MODELLING OF THE MURRAY DARLING BASIN

RPS has been awarded a significant LiDAR and aerial photography project from Geoscience Australia on behalf of Murray Darling Basin Authority (MDBA). The million square kilometre Murray Darling Basin produces most of Australia's food. Accurate terrain mapping of the basin is crucial for managing the impacts of climate change, water security and infrastructure design.

The project's aim is to produce an accurate terrain surface over 22,000 square kilometres of the Murray Darling Basin for modelling water flows. The hydrological models must simulate the water flows across extremely flat areas such as the Menindee lakes and Willandra lakes and there is a requirement for high vertical precision. Airborne LiDAR and aerial photography survey was seen as the only realistic way of accurately mapping such a large area. The project is now well underway and is the largest LiDAR survey ever to be undertaken in Australia.

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DEWFISH DEMO ATTRACTS INTERNATIONAL ACCOLADE

The Condamine Alliance's Dewfish Demonstration project has received the International River Foundation's annual Australian Riverprize for outstanding quality in catchment management and river science. RPS has been engaged on the project – one of Australia's most significant multi-disciplinary Natural Resource Management Projects – through its foundation stages.

Focussing on a section of the Condamine River catchment in the northern Murray-Darling Basin between Toowoomba and Dalby, RPS conducted aquatic ecology, riparian vegetation and ornithological surveys, water quality investigations and produced the initial river reach environmental management plan.

Since implementation of the management plan and adoption of other project outcomes aquatic habitat and water quality have shown clear



improvement at the site and further downstream, and significant community recovery of native fish species at the site has been noted with up to 1000% population increase in some instances.

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RPS



REGREENING SOUTHERN MOPTI

RPS supported Tree Aid in their successful Trees For Change project in southern Mali over a five year period, working with the communities in the Bankass District closest to the Burkina Faso border. Large areas of almost barren land were re-forested and communities benefitted from the tree nurseries, the wells and the agro-forestry enterprises established in the process. So it was a natural progression for Tree Aid to ask us if we would help them and their local partners, Sahel Eco, to secure the £595,000 three year budget for the next phase, with an 85% grant from the European Union fund for climate change relief by RPS providing the required 15% match funding (£82,000) between 2012 and 2014.

Greening Mopti is an ambitious project which aims to extend the same approach to eleven other communities in the Bankass District as well as three in the neighbouring Koro and two in neighbouring Bandiagara Districts. The plan is to establish 200,000 new trees of economic and environmental benefit in and around these sixteen communities and to encourage naturally re-seeded trees to establish themselves across a much wider area. The aim is to extend the re-greening programme across the whole of southern Mopti as far north as the confluence of the Bani and Niger rivers where the regional capital of Mopti sits.

Early in 2012 local radio broadcasts began inviting individuals and groups across the southern districts of Mopti to present ideas for

reforestation projects to the Committee for the Promotion of Trees. A total of 547 projects were presented and 357 projects were chosen for implementation.

Despite a delayed start to the training programme, due to the civil war with Touareg tribes in the north and the resultant coup in the southern capital of Bamako, 84 tree nurseries have been established across the project region, 357 project leaders have received training in project management and 3,774 people (including 1,132 women) have attended free public film events staged at 20 village centres demonstrating the necessary practices and techniques.

Such has been the enthusiasm and uptake for the project from local volunteers by the end of 2013 they have already planted 104,500 new trees which is more than half of the project's target (52%). Many aid agencies over the same period have continued to suspend their operations in Mali but with RPS' continued support, the EU were persuaded to continue funding this project and work soon recommenced under the renewed protection of the Ministry of Foreign Affairs and International Co-operation of the Republic of Mali. The encouraging results on the ground already speak for themselves.

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Maurice Koné, Tree Aid's Mali Country Manager (right) visits the site of a former RPS supported Tominion tree nursery. Now lush vegetation grows as far as the eye can see where once there was little or no land cover.

The reforestation at Mopti is making a huge impact on communities trying to support themselves in a seriously eroded landscape. The significant progress made this year shows how keen villagers are to apply their training in reforestation. Thanks to long-term funding from RPS, TREE AID has been able to point to the regeneration work already carried out and demonstrate that the benefits for communities and landscapes can be huge as a result of people's commitment to this type of intervention.

Philip Goodwin,
 CEO, Tree Aid



Aisha Yahya presenting her reforestation project to the committee for the promotion of trees.

RPS AND RISE FOUNDATION, ERBIL

RPS opened its Energy office in Kurdistan's capital city Erbil in late 2012 to support its oil and gas clients operating in Kurdistan. As the conflict in Syria has intensified, Kurdistan has accepted more and more refugees, and our office in Erbil means that we are well placed to provide some practical support. We have chosen to do this through the Rise Foundation.

Rise is newly registered as a small NGO charity working with Syrian refugees within Iraqi Kurdistan: working in all eight such refugee camps with other NGOs. In December, John Pothecary, Julian Russell; Mike Powell and Liane Butcher, all from RPS Energy, visited the Kawergosk permanent refugee camp near Erbil.

Kawergosk was established in August 2013 on land allocated by the Kurdistan Regional Government and is managed by UNHCR – the United Nations Refugee Agency. It was intended to provide tented accommodation for up to 10,000 refugees, but currently provides shelter for 12,400 within its 419ha site. Most inhabitants of the camp are from Qamishli, Syria, speaking Kurdish and Arabic.

Tents, electricity and water are provided for all households in the camp by the Kurdish Authorities, but the sheer number of displaced people means that conditions are currently very basic. Various NGOs are

working to help improve conditions for what looks likely to be a long drawn out stay in a country that despite extremes of heat in the summer can be very cold and wet in the winter. Rise is helping to prepare the camps to cope with very wet winter conditions by securing donations of appropriate materials and organising working groups by employing refugees plus external volunteers.

RPS has most recently raised money to help Rise in their efforts through a client fundraising event, by donating furniture for the Rise office and by the loan of a GPS survey device to help in mapping the topography of the camps.

John Pothecary MD EAME said "Kurdistan has worked hard to help refugees of the worsening crisis in Syria but it is a small country and the huge influx of refugees has proved a difficult challenge. It has accepted help from experienced NGOs and, to its credit, has also made it possible for new and enthusiastic groups like Rise to set up in Kurdistan and provide the sort of help that might just make the difference between, people merely surviving in poor conditions and actually being able to live comfortable if spartan lives whilst they wait for the situation to improve."

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John Pothecary, RPS, and Tom Robinson, Rise, examining drainage options at the camp.



Children at the camp



RPS PRESENTS TO SAPEURS POMPIERS

There was a blazing reception for fire-fighter students from France's Ecole Nationale Supérieure des Officiers de Sapeurs Pompiers (ENSOSP) recently as they attended a tailor-made five day course at the University of Ulster's internationally acclaimed Institute for Fire Safety Engineering Research and Technology (FireSERT).

RPS' Belfast office is an industry partner of FireSERT which is seen as a world leader for its Fire Safety Engineering postgraduate programme, strategic research and tailor-made specific courses. RPS Technical Director Barry McAllister delivered a very well received presentation as part of the course for the ENSOSP students on RPS' use of fire safety engineering in the design of the Titanic Belfast visitor attraction. The course also included a demonstration of structural fire performance in FireSERT's unique 600m² burn hall.

'Fire Engineering is at an earlier stage of development in France', explains Barry, 'and RPS has played a role in the education of a number of French students and in developing their awareness of the benefits that fire engineering can bring to projects.'

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UNCONVENTIONAL RESOURCES ACTIVITY PICKING UP FOR RPS IN NORTH AMERICA

RPS' North American Consulting business is seeing a significant uptick in unconventional resources project and resourcing activity, with E&P companies engaging in the various US and Canadian resource plays capitalising on the strength of our integrated reserves and resources assessment capability.

A host of internationally based energy companies are coming to play in the United States unconventional market, seeking to leverage our expertise in objective, independent deal assessments and valuable experience across established and emerging plays.

Specific interests for our current clients have included the established Montney shale in BC, Canada, the Cline (TX), Barnett (TX) and Woodford Cana (OK) shale plays in the US, and the Bakken (US-CAN), and Tuscaloosa (AL, US) oil plays; as well as several other emerging light, tight oil and heavy oil plays across the continental United States.

Typically these projects involve technical due diligence on potential unconventional gas or oil assets, geological assessment, generation of type curves, probabilistic reserves estimation and economic evaluation of assets, sell-side deals or buy-side deals. Occasionally full field static and dynamic models are also developed, usually dictated by deal deadlines.

A long and continuing track record of successful unconventional resource projects is being leveraged by RPS into a standardized approach to support clients in developing these resources.



RPS has developed a best practice workflow 'roadmap': used internally on multidisciplinary projects and by our clients to aid them in optimising provable reserves. Our approach helps clients understand and meet the many challenges of operating in unconventional plays, from quickly identifying potential gaps and focus areas to defining areas of risk and potential opportunity based on our standard unconventional field development approach. This approach includes recommendations on reservoir engineering and other technical execution aspects, and also on business processes and knowledge management, offering an end-to-end solution.

Our active clients span the breadth of the E&P industry, from small private equity funded concerns to major international oil and gas and energy utility players. Recent and ongoing contracts include projects for Direct Energy (UK), Sasol (South Africa), Viking Oil & Gas (Norway), Total (France), Marubeni (Japan) and Chubu Electric Power (Japan), together with a variety of US and Canadian operators.

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SHALE GAS IN THE UK - A MATTER WORTHY OF DISCUSSION

RPS is perhaps unusual as an independent consultancy, in that it brings together expertise in both energy and the environment. This expertise is very relevant to the understanding and mitigation of risk associated with unconventional oil and gas. Our experience in working in coal bed methane in Australia and shale gas in the US brings some insights that are not widely available yet in the UK, and we are pleased to be able to contribute to reasoned debate on shale gas.

As has been demonstrated by its success in replacing conventional gas supplies in the US, shale gas has the potential to help the UK's immediate energy problems as well as longer term energy security. Shale gas, however, is not without controversy and its high profile has been harnessed by lobby groups both for and against. We hope to help engender a proper debate on the real science, risks and benefits that underlie shale gas.

The debate is timely, as there is still a very long way to go to demonstrate even the possibility of commercial shale gas in the UK. The UK is not the US, all shales are not equal, their geological basins are not the same and neither is the terrain.

The exploration and development of shale gas presents its own particular challenges and risks but, as the world struggles to balance much needed energy production against its environmental impact, it could be part of an overall energy mix that displaces more polluting energy sources. It is certainly worthy of proper discussion based on reliable information.

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PROJECT PHOENIX: BIOMASS CONVERSION FOR GENERATING UNITS AT DRAX PLANT

RPS is providing a range of services for two elements of Project Phoenix, converting three generating units at Drax Power Station from coal to a renewable, cost effective biomass material. RPS is Lead Designer, Architect and Civil and Structural Engineer for the Ecostore and biomass fuel transfer element of the project that is currently under construction.

The biomass conversion programme depends upon the design and construction of a new fuel storage and handling facility, together with associated plant modifications to secure

the maximum benefit from co-firing. The implemented solution is an innovative and complex system of fuel delivery, handling, storage and reclaim for the pelletised fuel. It is delivered to site by train and automatically unloaded as the train passes, without stopping, through a dedicated multi-level unloading building incorporating a 15m deep sheet piled basement.

The fuel is transported via a system of conveyers, most supported on steel gantries, to a maximum height of 65m. A bespoke

process building facilitates the screening of the fuel to remove over-sized materials and ferrous contaminants. The fuel is then conveyed to one of four 63m diameter, 50m high storage domes, each one capable of storing more than 110,000m³ of biomass fuel.

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THREE Es FOR ICHTHYS LNG PIPELINE

Energy, Economics and Environment – the three areas for which RPS has been engaged by INPEX and Total to advise on the Ichthys LNG pipeline project in the Browse Basin offshore Western Australia. The planned 889km long and 42" diameter subsea pipeline will be the longest

in the southern hemisphere and the fourth longest worldwide. Gas will be initially processed offshore to remove water and raw liquids including condensate, before being exported for onshore processing in Darwin.

Prior to works beginning, we conducted a detailed economic assessment to gauge potential market impacts on local housing from the project. RPS also provided in-house services to coordinate and produce the EIA and ERM Plan including all ecological studies, external affairs coordination and environmental risk advice. RPS MetOcean produced 25 different reports spanning seven years for the Ichthys gas field measuring winds, waves, tides and currents.

As INPEX's client representative, we are providing dredging and construction survey QC to oversee dredging of Darwin harbour for the first 18km of pipeline and subsequent rock dumping operations during offshore installation of the pipeline. The work is due to complete later this year.

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RPS IN IRELAND – A LEADING POSITION ON ENERGY & ENVIRONMENT



Northwestern shore of Lough Corrib, Co. Galway

RPS is now recognised as the leading energy and environmental consultancy in Ireland, providing a wide range of support services to international and local operators as well as to government and financial institutions.

With Ireland enjoying a resurgence in new exploration activity, RPS is well placed with its mix of international and local expertise and experience to provide multidisciplinary support across the project life cycle. From our Irish offices and various international energy teams, RPS is the

only consultancy that has demonstrable expertise in country entry and licensing; seismic acquisition quality control and project management; exploration and field development studies; drilling support, environmental management and assessment, health and safety, risk management, due diligence and valuation; as well as energy infrastructure.

RPS has worked on a large number of oil & gas projects in Ireland, including high profile projects of national importance such as Shell's Corrib Gas

Pipeline and the national 2D Western Atlantic seismic programme. RPS also brings long experience of unconventional hydrocarbons, which may one day be of importance in Ireland.

Our local experience and our constantly developing international expertise is the foundation underlying our market leading position in Ireland as in many other places.

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Silver Jubilee Bridge, Merseyside, Liverpool, UK

RPS ADVISES ON NEW MERSEY GATEWAY

RPS' Dublin office is jointly appointed with Sweett UK as Technical Advisor on due diligence to funding consultancy Macquarie for the Mersey Gateway Bridge: a £600m Public Private Partnership (PPP) project for the design, build, finance, operation and maintenance of a new tolled bridge over the River Mersey in northwest England. Proposed as an economic driver to the regeneration of the Mersey Port area, it also encompasses installation and operation of tolling facilities for the existing Silver Jubilee Bridge. The project covers a north-south transport link providing a new major cable stayed bridge over the River Mersey to reduce traffic congestion, and delivering approximately 8km of new and improved highways linking the Merseyside area and North Wales and Cheshire. The new bridge will improve public transport links across the River Mersey and help encourage more cycling and walking. The draft design is 1km long across the river and canals, with three towers. Three piers will carry the two 300m outer spans supported by cable stays.

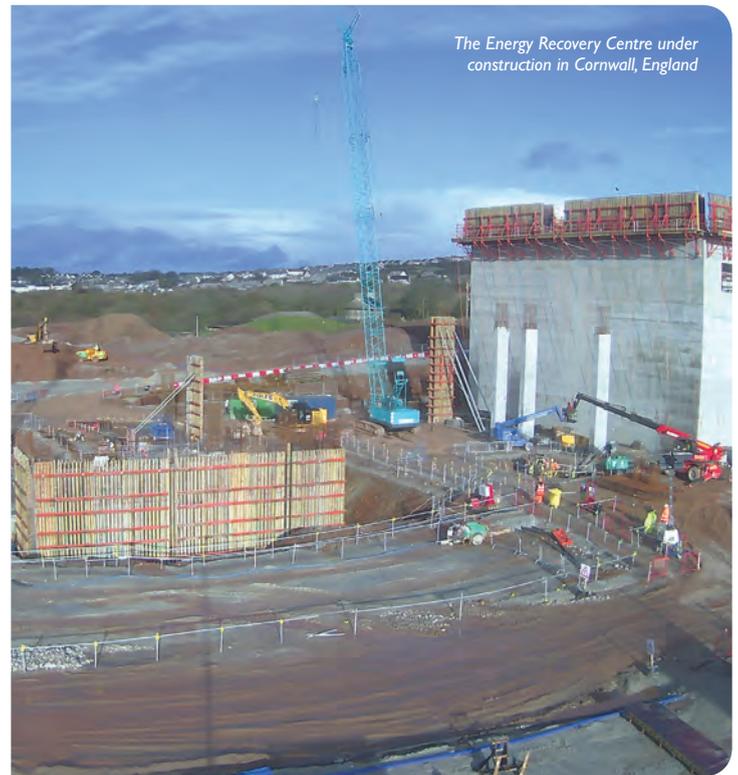
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CORNWALL ENERGY RECOVERY CENTRE IS ON SITE AND ON TRACK

The £117m Cornwall Energy Recovery Centre to provide affordable energy from the controlled burning of the county's non-recycled residual waste was approved by the Court of Appeal in 2012. RPS is providing lead designer, architectural, civil and structural engineering, building services engineering and fire engineering design consultancy services from our Newark, Newcastle, Abingdon and Belfast offices. We are delivering the plant with Vinci Construction on an EPC Contract. Construction formally commenced in September 2013. When complete the 20MW plant will operate on a 24 hour basis and be able to power 21,000 homes from 240,000tpa of domestic waste diverted from landfill. Ash from the process will be treated and stored on site for re-use in road construction. The building is being developed under a 30-year waste PFI contract between SITA UK and Cornwall Council, and is due to be fully operational in 2016, creating around 70 jobs.

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The Energy Recovery Centre under construction in Cornwall, England



SCOTTISH RECYCLING HAS ZERO WASTE

RPS staff from the Belfast, Letterkenny, Dublin and Bristol offices have been sifting through the bins for Zero Waste Scotland. RPS was appointed to analyse recycling waste samples collected from 123 local authorities, bulking stations, transfer stations and reprocessors.

The waste includes domestic, commercial and industrial samples which are being examined to assess typical levels of contaminants in paper, card, glass, plastic and metal recycling waste as a key part of Scottish Government proposals to maximize recycling quality through its Zero Waste Plan.

Results from the study are helping to establish a vital benchmark informing how the Scottish Environmental Protection Agency enforces Scotland's new regulations to collect key recyclable materials separately to ensure a minimum level of possible contamination, excepting where it is demonstrated that a comingled waste collection can deliver an equal high quality of suitable recyclate.

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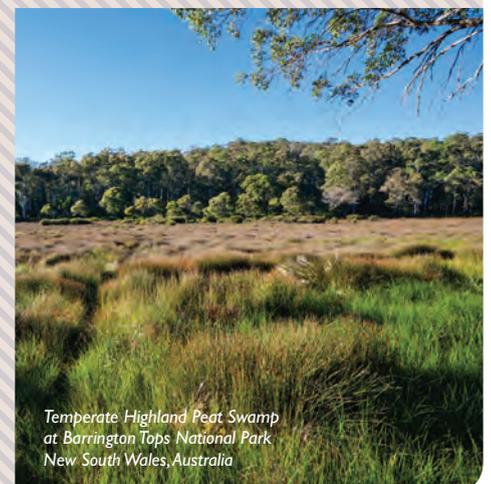
LONGWALL MINING HYDROGEOLOGY AND PEAT SWAMPS

The major consideration associated with an underground coal mine extension in New South Wales' Western Coalfields is actually what lies above ground, according to the final draft of a Groundwater Impact Assessment prepared by RPS' Water team in Sydney.

Directly above the mine is a network of Temperate Highland Peat Swamps on Sandstone which are nationally listed as Endangered Ecological Communities. The client utilises the longwall mining method – using hydraulic supports to prop the working space whilst shearing coal from the face, then allowing the old workings, or goaf, to fall in as the excavations progress onwards.

RPS constructed a detailed conceptual hydrogeological model using groundwater monitoring data. This conceptual model was used to identify potential impacts, such as a reduction of groundwater baseflow supporting the swamps or the potential for connective fracturing to occur, which could drain the swamps. The conceptual plan successfully addressed the impacts and also helped to adapt the existing site numerical model to better inform the assessment results.

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Temperate Highland Peat Swamp at Barrington Tops National Park, New South Wales, Australia



Martijn Sander

Safety and Risk Consultant

Martijn joined our Delft, Netherlands office last year with several years' significant experience in Healthcare. Martijn previously worked as Major Incident Manager for a large general hospital where he established a Quality and Safety office managing risk analysis across the board – from healthcare to hospital facilities and was responsible for handling incidents including the outbreak of a multi-resistant bacteria (Klebsiella) and major traffic incidents.

As RPS Safety & Risk Consultant, Martijn now implements project management in other hospitals, is improving the quality system of a mechanical engineering company and is working on a background study for the Dutch Council for Public Health and Healthcare. He is also coordinating the development of business in healthcare.

Contact: Martijn Sander (Delft)

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Sally Roblin

Occupational Health Physician

Sally is an Occupational Physician and joined our UK Health, Safety and Environment team last autumn. She has previously been a Partner in General Practice in 1994, before embarking on a career in Occupational Medicine. Whilst her experience covers a broad range of occupational health settings, Sally's particular specialty is the rail industry, and she has been an occupational physician at Eurotunnel since 2009, where she is continuing to work for RPS.

Sally lives in Kent with her husband and three children. She is a keen tennis player although unfortunately her skills don't always match her enthusiasm!

Contact: Sally Roblin (Nottingham)

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Derek Jacobus

Project Manager and Mineral Landman

Derek joined RPS HMA's Calgary office last October, bringing eight years of progressive land project management, negotiations, administration, business development and leadership experience in the Mineral Land and Power sectors. His role in the Mineral department is actively managing projects, negotiating mineral agreements with landowners and leading the department's implementation of the geoAmps land system.

Away from work, Derek enjoys family time with his wife and children, or can be found at the rink late at night playing competitive hockey for the Ranchman's Renegades.

Contact: Derek Jacobus (Calgary)

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Katie Kelsall

Senior Engineer

Katie initially joined RPS as an engineer in 2007, before re-joining us in August 2013. Based in the Birmingham office, UK she provides engineering solutions for new housing developments including adoptable roads and sewer design, private drainage, external levels, construction details and obtaining related transport and wastewater approvals from local authorities and water utilities companies.

Katie loves putting on her hiking boots for a mild jaunt – last year she climbed Mount Snowdon in North Wales (1085m elevation), and she is preparing to climb Scotland's Ben Nevis (1344m elevation) - the highest mountain in the British Isles, this spring!

Contact: Katie Kelsall (Birmingham)

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The strong balance of energy and built natural environment services brought to RPS by businesses joining us in the year to date, together with specific healthcare expertise and training delivery are a valuable compliment to our existing services and offer scope for further expansion within the occupational health and energy sectors. The completion of the acquisition of OEC near calendar year-end promises exciting new horizons with more significant presence in Scandinavia for us.



APASA Pty Ltd joins RPS Australia Asia Pacific's Built & Natural Environment business

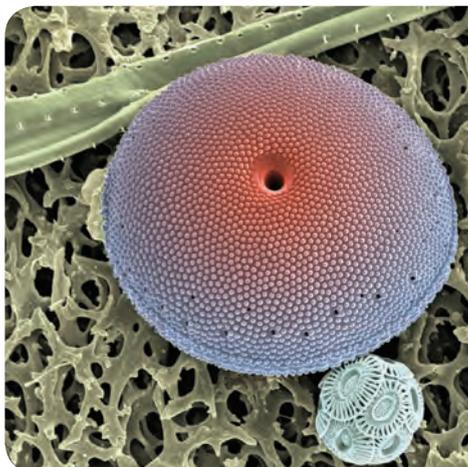
The July 2013 acquisition of Asia-Pacific Applied Science Associates Inc. (APASA Inc.) in Queensland and Western Australia complements our 2011 acquisition of ASA's US business. APASA is also a major oceanographic consultancy, with world-leading international expertise in computer modelling to predict and plan for meteorological and oceanographic impacts. ASA's multi-award winning software primarily supports offshore and coastal industries worldwide and marine emergency response organisations. It includes ASA's own-branded OILMAP™ and OilmapDEEP™ modelling tools.

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HMA Land Services Ltd joins RPS Built & Natural Environment North America

The acquisition of Canadian consultancy HMA Land Services Ltd in August 2013 boosts RPS' presence and visibility in the mid-stream energy and infrastructure sector. HMA has offices in Calgary and Fort Saskatchewan providing project management and land services. The company has expertise in conventional and unconventional oil and gas export pipelines and other utility and major linear infrastructure including power transmission lines and telecommunication lines.

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Ichron Ltd joins RPS Energy

Cheshire-based UK geological consultancy Ichron joined us in September 2013. The company has been operating for nearly 20 years, providing integrated data analysis and training services to the energy sector. Working mainly in NW Europe, India and the Caribbean. Ichron specialises in core description, depositional modelling, palynology, micropalaentology and nannofossil analyses using an inhouse laboratory. The acquisition of Ichron's world class specialist geological expertise adds to RPS' well-established oil & gas subsurface consultancy and training services.

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OEC Group joins RPS Energy

The Norwegian consultancy OEC Group joined RPS at the end of 2013. OEC has offices in Oslo and Kristiansand providing high level professional project management services to the oil and gas, construction and property, industrial, renewable energy, health and corporate development sectors.

OEC Group comprises three businesses: OEC Consulting AS (including regional subsidiary OEC South AS), Hopsitalitet AS and Optio FM AS; and provides a platform for significant current and long-term growth in the Scandinavian market in addition to expanding RPS' energy and BNE businesses.

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OUR 30 YEARS OF EXPERTISE IN NORWAY

As an international energy and environmental consultancy, RPS has provided services for clients in the Norwegian Sector of the North Sea since the 1980's. We have worked for over 80% of the operators in Norway, and in all regions of the Norwegian Continental Shelf. In late 2013 RPS acquired the Oslo based OEC Group, a well-respected Norwegian consultancy with thirty years' expertise in several industrial sectors including oil and gas. OEC's core services are the provision of Project Management support for large capital projects to a wide range of Norwegian clients. The technical services include Engineering Management, Cost Control, Planning, Procurement and Contract Management. The business started in the Oil and Gas sector, but has developed and expanded over the last 15 years to provide the same technical support

for much of the onshore Built Environment, including the Real Estate/Construction sector; Industry, Infrastructure and Renewables; Healthcare and Hospital Planning; and Facilities Management. The combined entity RPS-OEC offers a huge depth of experience forged in some of the most difficult operating conditions in the world, offering its clients a wide range of relevant and completely independent services across the life cycle of Energy and non-Energy assets. Through offices in Oslo and Stavanger we can provide access to all of our global services, wherever specific expertise might reside. Our Norwegian locations add to RPS' global spread of operating centres in other main areas of oil & gas operations, including Europe, Russia, the Middle East and Iraq, Africa, Southeast Asia, Australia, South America, USA and Canada.

The wide range of assistance that we can offer in the Upstream, Midstream and Downstream sectors of the industry can be categorised as Advisory Services, Technical Studies, Operational Support and Training. We maintain a strong technical content in everything we do, be this in geoscience, environmental sciences, health and safety, economics or Project Management so that the projects that we carry out are delivered on time and within budget, with the work being based on a firm understanding of the underlying science. RPS, together with OEC, form a truly distinctive independent consultancy resource for the various business sectors in Norway.

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