## E & C HYDROCARBON REVIEW – THE GLOBAL VIEW FROM EUROPE

## THE BOOM IS OVER - WHAT NOW?

This year I rescheduled my annual review and look ahead to the end of March 2008 to bring it back to a 12 month cycle – the reason being that by then we have received all of the annual financials from the E & C companies and there is a reason for this precedent to become a standard. Well best intentions often get derailed by many other activities and 2008 has been one of those years and what a year it's been. The situation has been changing at such a pace that I finally decided to put my jottings away for a few months, take a deep breath and then start again in October and send it out on or around the first of the year on the basis that the end of 2008 could signal a new start for our industry or a least a much more accurate understanding of what has been happening and where I see all the players in the E&C industry in the future – so here it is.

It was clear to me that something was happening to our industry that we had never seen before. A global financial cataclysm that began in August 2007 has engulfed the world and shows no sign of abating, in spite of massive support from every major financial organisation and government. For sure we have always been an industry that has been more cyclical than any other, but not having capital tied up in fixed plant and equipment we could be more flexible and have always rode out the bad times with some nifty reshuffling of our temporary staff and rented offices. That is not to say that good people and good companies did not disappear from view, the good staff more often than not turned up somewhere else but sadly some of the companies have been lost forever – this still continues and we will probably see some sort of consolidation following on from our experiences of the past 18 months. Many companies have plenty of cash on their balance sheets and there are a few sickly children starting to appear and with a number of rumours starting to appear we look forward to the New Year with more than the normal amount of interest.

This massive shift in the fortunes of our industry that many of us have ever witnessed and some those memories go back to the early 1960s, is the main reason that I postponed the publication of my annual review until now.

A number of years ago one of my revered colleagues in the E&C industry was driving me around Piccadilly Oxford Circus after an I ChemE function in Central London and we were looking up at one of the 1930's art deco neon displays that have been part of this traffic interchange for the past 80 or so years. There it was looking us straight in the face 'Requiem for a Dream' – the title for my book on the history of the E&C industry – the book that will not only dot the I's and cross the T's, but possibly put a few things straight that have been overhanging for the past 40 or so years. I guess this evening must have been in one of the regular cycles when the future was not as optimistic and workloads not as robust as we would like. A good title but maybe not as appropriate then as it was now – we shall see?

As far as company results are concerned this year we have had the excellent, the very good, the good, the could do better and the one or two situations that look potentially tricky as they have unfolded. There have seen some pretty dramatic rumours as far as project performance was concerned also hit the market - and rather than just rumours some have had substance.

With global stock markets booming and the bull market looking like it could go on for ever (we often think that) but there were still plenty of doom mongers saying that there was something not quite right about the numbers this time. The collapse started in August 2007 and has continued, more or less for the last 15 months (simplistically to a Brit this collapse seemed to be based on the unfortunate fate of a few trailer home owners in Tennessee) but the Brits have never really understood the property market in the US – we only understand our own which had been pretty strong for 15 years. We also failed to understand the complex 'financial instruments' that take place within the global mortgage market and the level of involvement by the banking sector and how this has ultimately affected the fortunes of the 'Geordie Nation' (an area of the NE UK that was at one time the cradle of heavy industry in the UK that ultimately came to rely on a very aggressive Bank / Building Society for most of its wealth).

We saw a recovery last Christmas and since then we have experienced a roller coaster ride and are currently looking at a very gloomy prognosis for the global, UK and European economies – anyway the end game will probably be part of next year's message or maybe the year after!.

The banks continued to lend money to those who could not afford to repay or those who wanted a better car or another holiday in the Seychelles on the back of the 'solid' equity within their houses (well until the last few of months anyway) and now it seems will not lend it to those who can pay it back! But as I said, you cannot mess with natural systems and the US banks sub-prime adventure has led to the virtual collapse of a major UK bank; at a cost, so far, to each UK citizen of $3,553. Also, back in the UK there was an outcry over energy companies' announcements to raise natural gas prices (which are linked to oil price) and electricity prices between 17% and 27% and probably even higher – these thankfully are showing some signs of softening.

As late as June those luxury car marques Jaguar and Rover were being snapped up by the Tata Company amidst much bugling and now only six months later the same people are pleading for financial assistance from the UK Government although in their defence they have been pumping millions of pounds of emergency funding them. At the same time the number of corporate jets jamming the VIP compound at Luton Airport was at all time record. I used to say that many people working in various industries seriously believed Jumbos and 777's had only 30 seats and recently it got to the stage where many employees in major banking companies believed that most of the public airlines no longer existed. To my friends in Bombardier and Gulfstream – 'The Arizona Boneyard awaits you '.

It's difficult to know where to start but we have to start somewhere so where better than the (should we say) inflated values of the E & C sector on the stock market during the first half of 2007. In our sector 'old paradigms' had been broken again and

again as savvy CEO's 'talked the talk' with the analysts and we saw stock prices continue to rise in what we must all remember can be a risky business if you don't take steps to assess, understand and manage that project risk on an ongoing daily basis. Although, as we will see later a lot of the risk of yesteryear has been temporarily parked as the appetite for total lump sum risk lessened. With a few exceptions we saw stocks rise to an all time high (in some cases) and then follow the market down verging on normalcy and ultimately much much lower, although there has been a small upturn recently.

The majority kept falling of course and we saw fairly early on a major drop in the Chiyoda stock which was only stabilised by their old friends Mitsubishi (and not for the first time) having to put their hands in their pockets. Although I noticed recently that their stock has been the highest riser and the highest faller on one day. Unlike 1999 however, it is unlikely that KBR will be invited in to give them any 'management assistance' although some of the characters who were 'helping' then are still active in the KBR organisation! So we sat and observed a continued drift downwards in stock prices not all at the same rate but a very noticeable decline – which if we review history tells us that the industry was probably on the way down and that the boom was well past its best. But like all financial statements there is always the disclaimer 'History should not be taken as a guide to the future' and of course deep decline is now with us as the industry stocks have perked up a little in the past few weeks and are now some way off the bottom.

There has been quite a lot of M & A activity within our sector in the past 18 months, but only a few at the larger end of the market with many smaller bolt on arrangements to enhance geographical spread and specific capability – most of it not terribly exciting to those not involved with those particular companies. This increased as we came to the end of 2007 and has continued throughout most of 2008. I am certain that most of these deals make a lot of sense. Rumours had simmered most of the year concerning more mega mergers / acquisitions coming forward – I am sure some of them will eventually come to fruition but probably not in the falling market that most of us are experiencing – to buy capacity (in certain countries) at this stage of the market is not often a wise path forward. We all suspect that of the one or two that actually happen in a year (and that's often on the high side) there will be ten to twenty in play that never see the light of day. So keep your eyes and ears peeled I am sure there are more to come. In fact in the last few weeks rumours have been rife of the pack reshuffling. Certainly the balance sheets of a number of the majors are loaded with cash at the moment but hang on a bit 'Is it wise to be spending that money in the current market place with the credit crunch still overhanging most of our activities' One year ago CEO's who were carrying large amounts of cash on their balance sheets would be taking a lot of flak from their Non Execs and most certainly the financial journalists. Now 'cash is king' again with the boards of most E&C companies advising caution as we try to steer ourselves through these uncertain times.

One situation that did remain on the table for a long time was the Technip / Saipem question. Only a few months ago Saipem said that they had nothing planned of 'a major nature', pouring cold water on the 'Technip' issue. They 'allegedly' took a serious look at Lummus in the spring of 2007– but let's be honest Saipem are not really a 'downstream technology' company, especially after selling their 50% share in

Topsoe back to the venerable Haldor. They believe they can achieve their growth plans without takeovers. "If in the future an opportunity arises we will look at it, but definitely at the moment we are focused on organic growth," Chief Executive Pietro-Franco Tali told Reuters. Tali also dismissed the suggestion he might buy Expro International, the British oil services company which said in February it had received a takeover approach. Well as we all knew KBR's former owners Halliburton were deep in discussions for this company and although a deal was ultimately done with the venture capitalists. High oil prices attracted buyers for oil services companies, including private equity firms and industry players which wished to bulk up.Tali said he was targeting two particular areas where Saipem needed to grow. "In liquefaction ... we are not yet the player we want to become," he said. (They may be looking at CB&I – only joking!). I thought they had finally become a liquefaction player in Algeria when they won their first big project after a see-saw tussle with those other aspirants Petrofac – however joining a club at a time when not much is happening is not a very exciting club to join and of course you have to be able to execute the project once you have won it.

I was however predicting one or two more major acquisitions in 2008 (i.e. in the circa $500 million bracket) when it was about resources – getting them and holding on to them. Its funny I wrote these words 6 or 7 months ago not knowing that the KBR / BE & K deal was already in the pipeline! Well for $500 million you can buy a mini Jacobs with about 9,000 staff, a strong regional presence across a number of industries and with a 'no risk' portfolio. Sounds a good deal to me and it brings O&M and Construction capability as well. Both of these areas were stalwarts in the old BREC days, along with that other perennial, 'pulp & paper'. I remember BE&K from my John Brown days in 1994 when we struck a deal with BE&K to take on DuPont Term work with Fluor and D&Z. Well I was pleased to read that this Alliance (now with Aker Solutions the successor to JBEC Houston) is still going strong in Camden, Delaware and has recently extended the Alliance for a further 5 years, executing quite sophisticated engineering tasks too. BE & K are a good example of owner managed companies selling up at the peak or near peak of a market and the founders cashing in their cheques. It happened last year with Colt in Edmonton and now the three or four principals have done the same with BE&K – starting from scratch 35 years ago and taking it to a $2 bn revenue with 9,000 staff is good going – best of luck to them. Will there be any more BE&K type deals – well maybe not in the short term. With the American economy struggling, although any potential stimulus puts a little colour back on the cheeks of E&C shares – especially companies like Fluor, Jacobs and now possibly KBR, it seems unlikely that there will be any further deals of this type until later in 2009. Reviewing the acquisition now the Colt situation is probably not looking too rosy with the collapse of the Canadian Oil Sands situation and the low oil price probably deterring much additional investment at this stage.

Moving onto the resources that support our industry there was spell for about a year which ended in the middle of this year when the value of the resources within an E&C company are finally (and quite rightfully) reaching their true worth – our industry can field so much intellectual horsepower, experience and specialist knowledge when planning and executing a major project, often at a remote location and containing some very complex technology, engineering and construction methodology. It is about time the value of the major E&C companies was finally recognised, rather than

valuing an E&C worker at the same rate as a Wal-Mart (hang on it must be at least Marks and Spencer !) shop floor employee.

When the boom was at its height there were probably acquisitions being planned where the focus was buying additional capacity (via existing resources in similar companies). I always thought this was a very tricky route to growth when you have to consider company cultures and the appetite of staff to move somewhere if they don't like the new owners. There are a number of other factors but in urban areas of high E&C concentration such as Houston and SE UK this could be a risky strategy. It can become tricky when you are buying for just increasing staff, especially in the UK where the DBS pension schemes are becoming as rare as the Moa and where the Agency / Contractor market was until recently very strong and remunerative. There are now few if any obvious handcuffs to hold onto older staff unless you can offer lucrative overseas packages. For younger staff it is slightly different – the good quality companies still attract the best graduates and if they can offer good training schemes, interesting work (coupled with some international assignments) and a relatively quick promotion path you are in with a chance of keeping them. The problem can be when they want to join the housing market especially in the SE UK (not such a problem in Houston or some of the other centres of our industry where getting a foot on the housing market is not so compelling) – this is when the Agency market beckons – with hourly rates of £65 ($100) per hour. It's a problem for our industry as Staff / Agency ratios move towards the 50:50 level. This was not the first time that this has happened in the UK. In the mid late 70's through to the oil price slump in the mid 80's the big North Sea Offshore engineering companies were operating with 35:65 staff agency ratios. The conditions were similar – Big Boom in the E & C industry – for the B&R's, AMEC, McDermott's and H&G's it was the UKCS Offshore oil growth period – 'Get those platforms out there as quick as you can, don't worry about how much it costs' – not so good for our engineering quality of course, as many of us will tell you. It even happened to MWKL in the mid 70's and into the early 80's with the boom in Ammonia Plant construction, sadly this boom faded as they all do and by 1986 the company was reduced to 250 staff. Simplistically it's 'boom & bust' we have been there before and I am sure we will encounter it again in the future long after the senior members of the 'London E&C Luncheon club' are pushing up the daisies! The staff problems are a little different each time but we have to handle them and will handle them in a way that our industry will be a strong healthy industry in the future.

I also mentioned last year that we were still waiting to see the effect on some of our peers risk taking in 2004 and 2005 (although you might say 'caught in the wrong place at the wrong time' would be a kinder observation). I mentioned chickens coming home to roost – and 18 months ago I had not seen a single chicken! Although I had seen a host of margins lurking around the 2-3% mark especially in the Onshore Lump Sum sector. The red ink is still not that visible (except in news emanating from LNG projects in Qatar and that still has some way to go yet and of course in Milford Haven , West Wales – more on that later), but I am sure quite a lot of it may have been hidden by good news on other projects. We have seen considerable schedule slippage in some of the more congested areas of our industry and this has resulted in some large overruns on the mega projects that are currently in execution – i.e. where it is planned for construction companies to move resources from Project A to Project B but Project A is running well behind schedule – especially

at a time when the quality of construction resources has been severely stretched due the sheer scale of activity in the current market place. For example I was talking to an EVP from on of the largest construction companies operating in the Middle East recently and he was shaking his head so much I thought it was going to fall off! We all respect this company, if not the best construction company in our industry, certainly within the Middle East where they execute a lot of their business. I can remember when they were 60,000 strong, not too long ago – it sounded like a lot of people to me. I then saw they were 140,000 strong and now I hear they are over 170,000. Lack of competent experienced supervision is a constant problem and I also understand hiring, training and holding onto staff is currently a major problem for all of the construction companies. Untrained welders arrive, it takes 4 weeks to qualify them and then some of them disappear – this is just one example of the problems all of the companies in our industry have been facing.

Back to our friends in the onshore E&C sector – well a lot depends of course on the relationships they have with their clients as to how much blood will eventually be spilt. This one could run for some time – we will observe with interest and wait for the 'news releases' – carefully worded of course not to cause too much alarm. With the majors often in involved in JV arrangements and the accounting rules differing from one country the amount of disclosure desired may not be the same or more importantly demanded by the accounting regulations of those countries. This has required some interesting wordsmithing – but ultimately the chickens come home to roost.

Some members of our fraternity have positioned themselves neatly in sectors where there is limited competition but the requirement is to own and operate quite costly equipment and access competent experienced construction companies – but here the margins can be extremely good if you can hit this rich seam. The 'Surf' business (although I understand the word Surf is no longer as acceptable as it once was) is certainly one of these areas and we continue to see our friends Technip and Saipem (who both have major exposure to the onshore lump sum sector as well) doing very very nicely in this sector. Still more details on our E& C friends will appear later.

I must mention the 'lone ranger' Wellstream in this area of business, not Surf but a sub surface adventure – a former Dresser Company that has always been seen as a minority player in their part of the underwater sector of the market – well 'poor relation' no more my friends although beware because in the last couple of months there have been some spectacular falls in this stock. The top performing stock on the FTSE Mid Cap in 2007. Wellstream floated on the Stock Exchange in April 2007 with a market capitalisation of more than £300m - bringing it in just behind bakery chain Greggs ( not sure the relevance of this – but 'half baked it is not). They made their debut on the London Stock Exchange with an issue price of 320p each, giving the company a market capitalisation of £318m since then they have zoomed upwards of £13.50 at their peak. Wellstream, which generates annual revenues in the region of £350 and employs 470 people in the NE region of England, says it is the world's second largest designer and manufacturer of unbonded flexible pipe systems for the oil and gas industry. It also has a facility in Panama City Florida and is building another in Brazil. Executive Chairman John Kennedy ('well known to many of you' – as Donald Charles once said) said: "The Company has established itself as a leader in the offshore flexible pipe market in recent years. I believe an IPO will be a catalyst

for a new phase of development of the company." Well he was certainly spot on there.

It said in a statement to the Stock Exchange that it had raised £75m from the issue of new shares to investors. Existing shareholders had sold £214m of shares into the market, representing" free float" of 67% of the company's shares. Wellstream's majority shareholder - European private equity house Candover, which owned 88% of the company before the flotation - sold 65% of its holding. The issue price catapulted the firm automatically into the FTSE 250 - and among the largest company's on the London Stock Exchange. Clearly high oil prices helped to drive Wellstream's orders to their highest level ever, providing a two-year backlog of production for the Newcastle factory. This has been a big UK success story and Messrs Kennedy; Chapman et al are to be congratulated in spotting what has been a lucrative boom niche market. Wellstream was always something of an orphan in Candover once the former Vetco companies had been sold off to GE and a Norwegian Private buyer. 'Cometh the day, cometh the man' it's a far cry from Floor 8E in Greenford! Of course there is a little footnote here with reference to the laws of gravity - in June the Wellstream stock price was close to £14 and most of the senior management team were fortunate to sell much of their stock at £13.93 in April 2008. By the late Autumn of 2008 the stock was back to its issue price of £3.20 but in the past few weeks has risen to £5 – but then everyone in our industry is in the same boat – you just need to be careful who you share your boat with.

On 2nd January 2nd 2008 we witnessed the markets' brief flirtation with $100 oil since then it has reached $147 with forecasters (or is it speculators?) looking upwards to circa $200 and even higher. As many people are aware, for some years we have been forecasting what would happen to the price of oil – and in some respects we nearly always get it wrong. Well here we are again back in the lower $40s leaving the Canadian Oil Sands becalmed at $ 70-100, depending who you believe and the 'tumbleweeds' reviewing maps of Alberta as a place for 'future visitations' – keep away from Calgary or Edmonton for the next few years (except if you are going there on vacation like I am next year).

We are of course all aware that oil prices were primarily being driven by demand, from China in particular and China was being driven by both America and the rest of the world's love of cheap consumer goods. As a result, the US balance of trade went badly wrong and the dollar continued to fall in 2007 and continued to stay around 2 to the £UK into Q3 2008. After taking over 40 holidays in North America over a 15 year period I decided to revisit Europe in 2006 when the Euro was looking quite fragile at 1.5 to the UK Pound - it lasted one holiday! We have now seen a reversal with the Euro strengthening to 1.1 and may reach parity so with the US Dollar weakening to 2.00 I headed west again in 2007 & 2008 with a vengeance and an empty suitcase – farewell Coimbra Hello Sanibel, Tucson, Taos, the Hill Country and the San Juan Islands.

Just one more line on my holiday plans! Although I am now struggling again and after my visit to the Hill Country in October I am looking at Canada, South Africa, New Zealand, Australia & even Brazil. There are very few locations for the Brits to go these days although at 1.5 the USA is still good value. (But they are a significant pointer to the way the world is going) and back to the hydrocarbon marketplace.

In my view it is natural gas that will form the Western world's bridge between our present oil-fired economy and a future based on renewable & nuclear energy. Putin has told ministers from the world's major gas-exporting countries that the era of cheap gas is coming to an end. The cost of extracting gas is rising sharply; therefore "the era of cheap energy resources, of cheap gas, is of course coming to an end". Some observers are saying that the GECF may develop into an Opec-style producers' cartel and that Russia was ready to set up the GECF headquarters in St Petersburg and give it full diplomatic status. The EU gets 42% of its gas imports from Russia, mostly via pipelines across Ukraine and there is growing concern that a new contract dispute between Russia's gas giant Gazprom and Ukraine could disrupt gas supplies to Europe this winter. The GECF will be closely watched by consumer nations who fear any move to copy the OPEC oil cartel could push up energy prices. Fears over energy security mean a formal organisation of gas exporting countries would be deeply unpopular in Europe and the US. It is feared that such an organisation could hold a monopoly on world supply and set prices to suit its own needs.

Over the next couple of decades there will be major increases in the use of natural gas. Like oil, local gas supply is depleting and most of the remaining reserves are in distant countries. So in future years with this GECF situation I believe LNG could make a come back and may become an even more serious big business – good for members of the 'so called club' whoever they are these days? It was as the Rockefellers would have said 'An exclusive Club', now I am not so sure. An exclusive Club numbers 3 or 4 not 9 or 10 (if you include some of the hangers on).

And of course, we will need major increases in global E&P and our pipeline network, which bodes well for many companies in the sector. But, like election-time TV screens, natural gas suffers from an excess of political interference and no more so than in Russia, the world's second largest reserve holder and as I said above has become, "a giant aware of its power". Just closing the valves on three pipelines can now achieve more than all of Russia's investment in nuclear weapons did – virtually switch off the European economy. The recent spats with the Ukraine are just a taster as to what might happen in the future.

The UK is not so vulnerable in the short term with less than 3% of our gas coming from Russia, 60% still emanating from our offshore reserves, a small but growing amount will arrive by LNG tanker and the rest from Norway via subsea pipelines – what a master stroke that was. UK annual consumption is 89bn cubic metres and our vulnerability is our fast depleting offshore reserves. Our 'Achilles Heel' is gas storage facilities, with only 15-20 days supply, which is why this area is so important. France and Germany both have over 100 days supply.

The most important thing everyone can do is to invest in conserving energy – more on that later too. In fact, in this respect, the 'gas-guzzling' state of Texas is already a leader – it is the world's third largest generator of wind power and the whole of the USA, with Spain, comes joint-second after Germany. In the parking lots the number of Toyota hybrid cars is growing by the month.

Also, in renewable energy the US is subsidising production of ethanol from corn. Now

that's great for the farm lobby, but only serves to increase global food prices in a world where hundreds of millions have to survive on less than one dollar a day. The far more efficient route would be to import sugar cane-derived ethanol from Brazil and less cheap consumer goods from China. And progressively increase gasoline prices to those of the rest of the developed world, spending the tax revenues on energy efficiency and public transportation, which in Houston currently resembles that of a third-world country.

In short, the way we have done things in the recent past is not an option for the future, whether it is in suppression of the will of the people, international relations or use of the world's finite fossil fuel supplies.

So how does all this relate to markets for subsea technology? Offshore, and deepwater spend in particular is going to see continued major long-term growth. As will offshore renewable energy, the new shallow-water subsea technology user. Minerals will increasingly be sought underwater - diamond mining is already happening. Recently a $66 million contract was announced with SMD for the design & build of two 'Seabed Mining Tools' for use in 1,600m water depth off Papua New Guinea.

So the demands for subsea technology are growing. However, the supply chain is already overstretched, particularly for that most valuable resource, experienced people. Attracting, training and retaining good people will continue to be the oil & gas sector's biggest challenge. Yes in every sector its always back to one thing – resources, resources, resources!

So to return to my starting point, in the words of the soundtrack to my generation, without a doubt, "the times they are a changin". For our clients it has brought mixed blessings – oil was around $130 per barrel and forecast to reach $200.

There is one aspect that needs to be addressed and to be addressed very quickly. There is still no real global consensus on the causes and effects of global warming and the potential dangers the planet is currently facing. Progress appeared to be moving towards 'something must be done or we could be doomed' and during the past year many governments have begun to start to plan and execute schemes to reduce carbon emissions. This could be a major 'partnership' opportunity for our industry that could bring decades of opportunity until the nuclear alternative is finally bedded in on a global basis. Make no mistake CCS is only a short term opportunity for mankind to sort itself out – it postpones the ultimate demise but is no panacea for our longer term problems. e.g. When I was a younger person I used to visit a chain of islands 30 miles off the SW coast of the UK, they are sub tropical, very beautiful and a good place for young people to enjoy themselves – the prognosis is not good and if we continue as we are they are going to be ultimately submerged in a rising Atlantic Ocean. I also have a friend, a former 'giant' of the E & C industry, now sadly retired who has purchased a very nice waterside home in an area called the 'Norfolk Broads in East Anglia. Never an 'offshore man' in his 42 years in the industry. However he is now coming to terms with the rising waters of the North Sea – his estate car always has two pairs of Wellington boots in the back! Recently he received 42 lorry loads of soil to raise the level of his garden – when questioned 'Are you sinking? He gave a

non committal response and quickly changed the subject. These are just a couple personal observations of the wider global problem. However my concern now is that with the recent global financial crisis there must be a real danger that this essential programme may not ultimately happen or if it does it will be a series of half measures that fail to achieve the current targets.

Anyway after highlighting just a few of the events, some of the issues and even pontificating on some potential future situations I am delighted to be able to present my 16th annual review of the International E & C Hydrocarbon industry and hope that in these unusual times I can highlight some of the major events that may enable us to understand the trends that point to the shape and size of our industry in the future and for those of us who are still gainfully employed to make strategic decisions that can prepare the ground so that we are able face up to and meet the challenges ahead.- and frankly they remain tough challenges.

Apologies for the 20 month gap (partly explained above) but I guessed there would be some very important events in our industry that could change the way we look at the future. Plus of course anyone working in our industry is also very busy. I have been able to pen this report during four separate holidays spent on Sanibel Island, a trip to Western Canada and a spell in the Hill Country during the past 8 months.

I think a trip to the Middle East would be a good kick off point. The boom underway in this region was the biggest I have ever seen in my 35 years in the industry – it was touching every single country except possibly Iran and every part of our industry – from Upstream, through Gas Monetisation and down through Refining, Petrochemicals and Fertilisers and it created the biggest projects that we have ever witnessed, both in capacity and capital cost – some of these projects are truly awesome, even if some never get underway – and that my friends is the danger!

The biggest risk to the energy investment outlook in the Arab World has been escalating costs. A substantial number of previously planned projects, whose viability was weakened by unrelenting price hikes, were already looking threatened and have already been postponed. However there are very positive statements emanating from most of the big spenders in this region that these ‘mega projects’ will not only happen but there are more to come – its just a matter of the capability of our industry being able to execute the work.

In 2007, ExxonMobil and Qatar Petroleum (QP) abandoned plans to build what was going to be the world’s largest GTL plant because of spiralling costs. Their Palm GTL project in Qatar was originally projected at $7 bn but the price tag had since risen to as much as an estimated $15bn. Like the Palm project, Shell’s Pearl GTL initiative in Qatar has experienced significant cost escalation. Originally estimated at $5bn, industry sources believe the Pearl facility is now costing Shell around $18bn to build.

A recent review of energy investments in the Middle East showed the cumulative energy capital has now reached $420bn. This represents a 22 % increase over its previous projections of $345bn for the period 2007 to 2011. The funding of these investments will weigh heavily in the overall capital demand and supply of the region. This level of investment is equivalent to about 6.3% of Arab countries’ GDP and 21% of Arab gross domestic investment over the projected period. Past reviews from 2006

to 2010 had shown rising capital investment was mostly matched with an increase in the number of projects. And the 2007 to 2011 review established the number of projects had levelled off. However, in the present review, the number of projects has for the first time declined by almost 10% across the whole region, except for the UAE, in each individual Arab country. In both reviews, the project costs have increased tremendously.

The factors most responsible for the escalation of project costs are notable changes in scope or the scale of key projects and, above all, continued soaring EPC costs. Reflecting the distribution of petroleum resources, a little more than half of the planned energy investments in the Arab World are located in three countries – namely Saudi Arabia, Qatar and the UAE. Saudi Arabia has continued to top the energy investment ranking with a $105bn mark. Despite slowing momentum, Qatar has maintained its second ranking with $65bn. The most notable change in the country ranking, however, is the UAE taking over Algeria's traditional third position. (Algeria and the other North African nations are typically included in this calculation).

Of the expected $420bn total energy capital investment in the Arab World, the oil supply chain including the oil-based integrated refinery-petrochemical link accounts for 43%; the gas supply chain including the gas-based petrochemical and fertiliser links for 44% and the oil- or-gas-fuelled power generation sector for the remaining 13%.

There is a much higher increase in the downstream sector, most dramatically in the oil-based refining and (mainly) gas based petrochemical sector. However, the Oapec (Organisation of Arab Petroleum Exporting Countries) affiliate reiterated this investment outlook could be affected by EPC costs.

In Kuwait, the Al Zour oil refinery ( and more on Kuwait later) – projected to be the biggest downstream facility in the Middle East by 2010 – will take a one-year delay from its proposed completion. The project, with a projected capacity of 615,000 barrels per day, bid up to $15bn in estimated construction costs, more than half of the original cost estimate. In Oman, the $10bn, 300,000 bpd refinery being proposed by the government at Duqm could now be scaled back to half that size, as concerns grow over the feasibility of the project in its current form.

Recent news from Kuwait tells us that KNPC has reopened the prequalification process for contractors on the Clean Fuels Project after lengthy delays incurred last year due to a related contract dispute on the Al-Zour refinery (see above). KNPC says it has reopened registration for contractors, although it is not known what the new timeline on the project is. The Clean Fuels Project covers the upgrade of the Mina al-Ahmadi and Mina Abdullah refineries to boost their combined capacity to 800,000 barrels a day (b/d) from 736,000 b/d. Prequalification had been due by mid-September last year. Contractors have previously been told that the ministry will resolve the dispute over the 615,000-b/d Al-Zour project before pressing ahead with the Clean Fuels Project The award of more than $9bn worth of contracts at Al-Zour was thrown into doubt in August last year, when Oil Minister Mohammad al-Olaim referred them to the State Audit Bureau. This followed criticism in parliament over the way the bidding process had been handled.

Part of the difficulty in moving ahead with the Clean Fuels Project is thought to be the involvement of Fluor in both projects. Fluor won the $2bn contract for package three on Al-Zour, which has subsequently attracted controversy because it was awarded without competition. The firm is also the consultant on the Clean Fuels Project and its Houston office is handling the prequalification applications.

Summing up and in view of the uncertainty regarding refining margins (which I have already briefly alluded to), the refinery link of the oil supply chain could be affected most," Apicorp said. "In addition, the availability of low-cost and high-quality feedstock adds a further element of uncertainty for the ethane-based chemical industry. The resulting capital structure for the period 2008 to 2012 is likely to be 50% equity and 50% debt, compared with the equity-debt ratio of 47:53 found in the 2007 to 2011 survey.

This will certainly be 'food for thought' for almost every E&C Company engaged in this region and let's face it I cannot think of a single company that does not have a share of the action somewhere. From the glass towers of Yokohama and Chiba through Seoul, Perth, Bombay, Rome, Milan, Munich, Dortmund, Madrid, Paris, The Hague, Haarlem, London, Houston, Calgary as far as the boulevards of Pasadena and Irvine ( yes it is still open), California – 16 Hours later. Everyone has a share in the cake!  Yes everyone was busy and many other parts of the world were active as well but the real activity powerhouse was the Arab World.

Many years ago one of the first words I heard uttered in CJB (John Brown), as it was then was, was 'Yanbu'!  – I did not have a clue what it was or where it was – and it led me to think what sort of an industry had I joined! I quickly learnt as did Bechtel, Parsons and Fluor who were the first majors to take advantage of the mega boom when the first major complexes appeared from the sands of Jubail and Yanbu. Houston played a major part then and will play a major part in the latest adventures but this time lots of others have been taking a major share as well – it's the only way the work can be executed and the also we have to consider the amount of risk that may ultimately be involved.

The Russians have been involved in a lot more of old style brinkmanship which must have most of the IOC's scratching their heads and a number of contractors who have been following in their wake also wondering what's going on. Only recently BP seemed to be yet again under the cosh with their JV Company TNK-BP coming under further investigation. But in Russia we see revolutions come and go but nothing changes that much – in the 20's and 30's the Émigrés resided in Paris now it's London (and they have a lot more money (but much less than they once had) than their counterparts in the 1930's ( who were basically broke)

Let's get down to examine the fortunes of the major E & C companies and the winners, losers, departures and new entrants. Like UK Soccer our industry has its own Premier League and the similarities don't end there. In the UK we have promotion & relegation, something that is totally alien to most Americans but is an annual occurrence in all of our major sports.  Former establishment members can be found wallowing in a single / double A equivalent league in a couple of seasons after relegation. Franchise operations are virtually unknown, although with demographic changes there has been one example (in Milton Keynes – so that should keep Shaw

happy – maybe they will sponsor the MK Dons in the future?). The Premiership in the UK is full of the Bechtel's, Fluor's' and KBR's but you do have newly promoted companies as well – this interchange is a regular part of the European E&C Industry

This time a couple of years ago I mentioned the newest member of the LNG Club arriving in somewhat unfashionable Paddington although as I perceived and it has been confirmed after a number of visits to this thriving little corner (and one of the last central London locations for our industry where CB&I, Davy Process Technology and Yukos still live 'cheek by jowl' – although Yukos may have already moved on , but how would we know?) no longer unfashionable, boasting the reincarnation of great railway hotels of 19th Century, 'done up' in the modern style – for Great Western Railway read Hilton Premium (prices) for Great Central Railway read Landmark (even more Premium prices (then Sir Sam Fay Chairman of the Great Central Railway, was a person never to stint on luxury when he came down from Yorkshire in the Edwardian era. Then you add another monster Hilton equidistant between the two edifices of 'Railway mania' you may get my drift?

Foster Wheeler, MW Kellogg and Davy may be long gone from this area, from another era in fact but there is still a place for the E&C Industry in Central London – maybe others will move back (we already have the Technip subsidiary Genesis, nicely settled in Holborn (on the fringe of Covent Garden) and AMEC clings on in the Angel Islington, with a few more in the suburbs.

I say Paddington is thriving mainly on the evidence of the cover prices for the new theme restaurants that have appeared in the past couple of years or so. Late last year I was eating in some sort of 'journalists club' near the CB&I office expecting Evelyn Waugh, Ed Murrow, Hans Van Kaltenborn or even Ernest Hemingway to saunter in from the Abyssinian or Spanish conflicts only to be confronted by David Wood and Bob Storey flying in from Rio (thankfully without Bob Hope and the 'Lady with the Tutti Fruity Hat) but with similar tails of glittering new refineries processing heavier crudes and exporting the refined product to the USA. (what a difference a year makes though)

Although John Sheffield had not flown in from Rio, it's a place he will certainly be well acquainted with! He remains a bit of a buccaneer in his own right – an 'old China hand' since the early 80's, when he was with John Brown, he is a typical product of our industry, a graduate of the ICI production line in the 1960's (one of the finest training programmes young graduates could hope for then – many went on to lead other companies on both sides of our industry) he then joined the 'dark' side in mid career and has never regretted it. A chemical man who reinvented himself into an LNG and Gas expert in the 1990's he has reintroduced himself to China and now (into his sunset years) lectures extensively on a global basis introducing younger engineers to the principles of LNG and advises some of our major Clients as a consultant in LNG Regasification Terminals. Our industry is full of people like John, they love the business and later in life are still travelling at one hundred miles an hour putting a lot back into the industry. They are like prize fighters – just one more fight, just one more crack at the championship. John will be fighting four rounder's in front of a hundred people in 'tank towns' in Michigan long after most of us have hung up our gloves ! In fact he resembles Tony Galento (with specs).

We are back to the era of ‘buccaneers’ or as Trollope might have said in one of his novels of the 19th century ‘The way we live now’ – the world was again alive with tails of El Dorados in distant lands. The world was thirsty for more petroleum products and was also awash with very wealthy entrepreneurs who were looking for ‘worldly people who understood our industry, had some financial skills and were able to put a deal together that could satisfy all (or most) of the stakeholders. We wished them all the best – there was every likelihood that some of them would be successful. Having mentioned the Brazilian refinery I could add similar projects (in gestation then but no now) on Teesside in the UK ( certainly not an Eldorado but had possibly other positives and being in the former ’cauldron’ of the UK Petrochemical industry and others in Canada plus the usual suspects in the developing world. Exciting times eh! We talk about the days of the ‘Buccaneers having gone’ but they never really go away they just look different.

Well one year has passed and alot has changed and not for the better. The Teesside Upgrader in its Sonhoe format finally passed into history in mid September (but don’t tell the Teesside Development Corporation), many of the Canadian Upgraders have disappeared with thousands of jobs in those E&C Companies who had pitched their tents in Edmonton and Calgary backed in the main by solid IOCs’. In the last 50 Days the following appear to have been shelved - PCOSI Forthills, Suncor Voyageur, Opti Long Lake Phase 2 and Shell Scotford Phase 2 - the market in Canada is cooling very quickly. The Teesside Upgrader is a particularly poignant case where clever people from the E&C industry set out on their own, with an idea, a dream of developing a novel idea into what would basically be a new refinery in the UK, the first for nearly 40 years, at a time when our industry is at its peak and costs are astronomical – but money is flowing. Although their organisation can often leave a lot to be desired – I have heard ‘A rudderless ship’ mentioned a few times. They had some backing from a respected finance house but the development carries on for over two years as the configuration is being refined and the search for suitable feedstock continues. Then the nightmare happens – dark clouds appear in August 2007 with the first inkling of trouble in the global financial system followed by an apparent period of calm and then the real trouble comes along in 2008 with a full blown credit crunch – at a time when TICs’ were starting to fall the money dries up not only for small developers but for some major oil companies as well, so that was it – end of story. Nobody was looking at a new cost estimate I suppose which would have been a very costly exercise. Difficult to see how any of these schemes will get off the ground in the current climate although my refining colleagues say the Teesside Upgrader is still out there now that the former principals have departed. I am not sure myself but I do hope the former principal is still hanging onto his Fine Wine Collection and even finer house located in a rather nice part of West London - I’m sure he will and like the John Sheffield’s of a few years ago reinvent himself and suddenly appear with a new, even better idea – possibly a slimmed down scheme suitable for the austere times ahead – it may even include a Cross Still!

The Brazilian Refinery is also very much ‘up in the air’ after one of the backers has, we understand, dropped out. A few more months of stability in the world might have led to some of these projects coming to fruition – how many times have we said that in the last 50 years? It must be said that neither of these projects could be realised when we were living through the greatest boom in memory, when money was awash in every bank and enthusiasm was never higher. I think we must come to the

conclusion that this type of project should be left to the grown ups i.e the IOC's and the NOC's and even they have been failing to make the numbers add up on some of their Heavy Oil Upgraders. It was a brave show from the individuals concerned but they were finally defeated by the credit crunch and the start of a potential major global recession of unprecedented severity.

I must get back on track (as Sir Sam would have said) and talking of Eldorados we have Paddington, Peru and LNG. We had gone a long time without a firm LNG award until February 2007 when their single train project was awarded. There have been a number of trials and tribulations in the meantime, including an earthquake and rumours of financing problems – well it seems that both have been overcome (which is what our industry is actually good at) and I was only reading six months later that the Inter American Bank had approved a loan of $400 million and soon afterwards another $250 million was pledged by another financial organisation. Although Yootha Joyce no longer 'staggers' along Eastbourne Terrace, (neither does Joanna Lumley sadly – one of the benefits of working for CJB in the 1970's) I am reliably informed neither does Don Hill, as frequently as we had expected. Last year I remembered the (then) head of the John Brown Company ( a chap with a double barrelled name), now residing in deepest Devon, who said to us ' You know that this contracting game is full of bubbles – they come and go'. At the height of Offshore Mania in the mid 70's, he said that it would not last long – with the peak some 5 years away it was hard to take him seriously – he was right of course. In recent years we have seen a number of major bubbles (GTL – came and went (probably but there is still coal to fill the gap and that may be passed its peak now) – but more of this later, an LNG bubble that stalled around two to three years ago and has not really got back into its stride again and shows little sign of reaching the heady days of a few years ago. Huge bubbles have been experienced across the Gulf area – no more than in Qatar and Saudi Arabia, the Oil Sands of Western Canada and smaller areas of hectic activity in a number of other locations.

As the boom gathered pace we saw a continued succession of mergers and smaller bolt on acquisitions – 2007 & 2008 has been no different, a few of the former and lots of the latter. I thought that 'Colt' may have been at the peak of this type of activity but it still had some way to go. We have heard little of Colt outside Alberta in the past 18 months but we can be sure they continued to ride the bow wave that was 'Tar Sands' but must be sliding down the other side of the hill now but there has been little hard news. My agent in Edmonton told me they were continuing to do very very well and then he had not heard anything for several months. And what an active area it was – a mini Middle East – an area where every major western contractor & client had his nose in the trough. But indigestion was the problem – the projects are huge, the risks are high, the schedules long and the labour in short supply. Then it all sadly started to fall apart as we saw one after another of the prospects delayed and some cancelled including that of a new entrant and someone close to home - StatoilHydro who after investing a lot of money in a local company shelved their upgrader for one year (it may be longer) and quietly ran down their operation in Calgary.

Anyway back to Paddington and the rise of CB & I who we can now safely say have been promoted to the Premiership ( in Soccer parlance teams promoted to the Premiership for the first time generally lack class but I think we can safely say this is not the case with CB&I – they engaged Pini Zahavi (or the E & C Equivalent) to hire

in the best talent available and have a large squad of talented individuals – whether they have a team is another question that is too early to comment on but Derby County they are not! Maybe Sunderland in the 1950's or Chelsea in the 1930's. Only soccer historians will get my gist.

So it was rather appropriate that the acquisition of Lummus should take place on a weekend the Championship soccer teams were taking part in the end of season battles that would take some of them into the Premiership. It is indeed, or was a fine fit – with so many mergers ending up with huge overlaps and resultant conflicts this one was really a 'no brainer'. CB&I had a solid construction heritage and has by acquisition extended that into the Upstream and Gas Monetisation areas – Re Gas terminals were always a natural area (with their first class tank background) and the company now has a strong global position but short of a 'stellar' acquisition there was no real chance of organic growth taking them into the highest level. One could also speculate that in the short term the Peru LNG Liquefaction project was the one real opportunity – other contractors had either said no or failed to close the deal and in was midnight on the dance floor when a hand went up –'We will do it for you'. However many of the old alliances and relationships are perhaps ripe for change and new alignments may start to appear (but are not evident yet). So the jury is currently still 'out' but in a year of many changes and surprises who knows what is around the corner? Peru will soon be out of the way and a new LNG opportunity will need to be found. Anybody got any ideas - not looking very optimistic at the moment? By the way anyone know how Peru is really going – there has been scant news from the site since the completion of engineering, but as they say 'No news could be good news'

On the positive side they have a new initiative in Floating LNG with Hoegh, but they are only one of a number in this expanding field and it will be interesting to see how this develops over the next few years.

Of course before that they will have to complete the two LNG Re gasification terminals that have been the mainstay of their backlog recently, from the coast of Chile to Milford Haven, both in their own way very challenging locations. Well the last two years have been 'anni horribli' – poor weather, poor subcontractors, the inevitable IR problems and then two profit warnings , the first a truly astounding $317 million adjustment then a couple of months later another smaller, but still significant item of $86 million. They had a number of old hands in Paddington who knew the labour situation in Milford Haven and might have warned them of 'Danger Ahead ' – still the Amber Lights seem to have been ignored as they hurtled on towards the current situation. The one thing you cannot hang on them is the British Weather, which was truly dreadful in 2007 and for the past 18 months or so. Isle of Grain is now complete after a few minor skirmishes, South Hook should have been finished but will not be until Q1 2009 (good job the Export Terminals in Qatar are running as late or their could have been a few laden tankers sailing the world looking for takers – which I understand is not an easy job at the moment). We understand the Chile project is in better shape.

I understand that ABB sold Lummus Global for approximately $950m (€696m) at May 2007 exchange rates, three years after putting the downstream oil, gas and petrochemicals business on the block. In the end there were only three serious contenders (some would say only two) but the winners were the company with the

least overlaps (by a long way) and the chance of a lifetime to join the major league. It's a very long way in a short time and given a sympathetic and understanding approach the future for Bloomfield, The Hague, Brno and Wiesbaden could be much brighter in the future?

ABB said as long ago as 2004 that it was continuing negotiations with several parties to sell Lummus Global and expected to complete the deal that year but was forced to restart the process at the beginning of 2007. In this transaction, Credit Suisse advised ABB on the sale of Lummus Global to CB&I, UBS advised CB&I.

ABB said it had discovered certain suspect payments in a number of countries in connection with the sale of Lummus. The Swedish firm reported these payments to the US Department of Justice and the Securities and Exchange Commission and retained liability for potential fines and penalties. Philip Asherman, president and chief executive of CB&I said: "This is a compelling strategic opportunity which will enable CB&I to better respond to the growing demand for energy infrastructure around the world. The acquisition transforms CB&I into a fully integrated provider with full scale capabilities in the global hydrocarbon sector." Never a truer word spoken – there is a chance that 1+1 could equal 2 (or even a little more) but looking at the situation now that statement may have a hollow ring.

The acquisition was funded using a combination of cash and debt, with a possible subsequent issuance of stock following the closing. Lummus is one of the 'great names' of our industry and I believe celebrated its 100th anniversary last year – I am not totally certain but I think they were founded in 1907 – Walter is sadly long gone though) Like many companies it has been passed around for the past 30 years or so as a makeweight in supposedly more strategic deals. As I alluded for several years now it was certain to be acquired, however until the asbestos settlement was concluded, this deal was very unlikely to go through and also once a few tricky LSTK projects had been settled or other outstanding liabilities taken by ABB so that the position was more attractive. A global execution & technology company with excellent credentials in Refining and Petrochemicals the final sale price believed be under $1 bn could be a positive deal if the current bull market continues. However with the stock prices in the 'sink' the value of Lummus must have been written of to 'Nil' value in the current state of play.

Maybe a small word of caution is in order - don't go for full integration in the short to mid term. Both companies are coming from different ends of the business – I have experienced this a couple of times in my 35 years in the E & C business it's hard to achieve in the short term. There has been some integration however with the former John Brown office now reporting into Holland which may not be a good thing long term given the history of John Brown companies in the UK and Holland.

A relative newcomer to our industry (he has now moved on from his most recent position) said recently '"We think it is smarter and wiser to grow organically instead of investing a lot of money in consolidation, integration and costly mergers. Normally, it takes double the time estimated and you get half of the synergies people were projecting." I think this fellow may be right! But you must have patience as organic growth is hard to achieve – consistently.

Well it's a brave man who stands up in front of the analysts and repeats those words when the industry is not looking as rosy. I have always been a progenitor of 1=1 will ultimately equal < than 2 (and often much less) – believe me I have studied almost every E & C merger and 1+1= 1 is normally the final result. But they keep saying 1+1 = 3 because organic growth is very difficult to achieve.

So we come back to Eastbourne Terrace where the general engineering contractor who has inhabited this street since 1957 and has in the last 20 years or so has been involved in six mergers and takeovers – well the answer is still one! When I joined in 1974 they had 1500 staff and they have 1500 today. In the 35 years or so in between, staff numbers have ranged from 500 to 2300 and back again. I think this alone says so much about the industry and the people who work in our industry and one of the reasons why I am still proud to be part of it.

Whilst we are still in W2 and mention of Pini Zahavi (who is the world's most influential Soccer agent) I will take a moment or two to remember John Briggs who sadly passed away earlier this year. John had retired from the full time fray some years ago but still appeared occasionally at social functions with those who had passed through his books over the years, which in UK terms is almost everyone over 50 years of age who reads this review! John was the British Foulger or Clouthier, but he was a gentleman in the English sense, very much old school. Over the past 30-40 years he placed numerous executives in the UK E & C industry and I refer to W2 as many John Brown employees would have sheepishly walked over the road from Eastbourne Terrace and disappeared into the streets on their way to his offices in Mayfair for a 'friendly ' chat. We won't see his like again I am sure – although there must be a place for a 'well suited' person of our industry, who knows a lot of people and how our industry ticks – there is a goldmine out there because most of the head hunters I have come across (mainly socially I would add!) don't really come up to snuff – just examine their candidate lists!

Another E&C 'giant' who past away in 2008 was the much revered  Sir Richard (Dick) Morris, who had a long and varied career in Courtaulds, Brown & Root and in his later tears with Nirex and as an advisor to M.W.Kellogg. He was revered by colleagues as a man of huge vitality and ambition combined with good humour, who demanded high performance from his team but never shied away from a challenge: as one put it, a commander "always ready to fix bayonets and charge". He was involved in notable projects and undertakings which required considerable sensitive treatment such as 'The Great Man Made River Project' in Libya and the 'Privatisation of the Royal Dockyard in Devonport'

Having previously served as a director of British Nuclear Fuels, Morris was asked in 1989 to chair UK Nirex (the Nuclear Industry Radioactive Waste Executive) which was charged with the near-impossible task of finding acceptable repositories for intermediate and low-level nuclear material.

During Morris's tenure, having abandoned a list of possible sites from Caithness to Bedfordshire, Nirex's plans focused on Sellafield in Cumbria, where an underground "rock laboratory" was mooted as a precursor to a full-scale deep facility.

Morris applied his formidable energies to persuading ministers, keeping Treasury officials on side, and making sure the relevant science was well explained and understood.

But the proposal was always going to remain a political hot potato, and after a lengthy public enquiry it was turned down by John Gummer, the environment secretary, just ahead of the 1997 general election, on grounds of "scientific uncertainties and technical deficiencies".

In response, Morris pointed out that: "We cannot get the information to show whether the site is safe without a rock laboratory, but it now appears we cannot win approval for a rock laboratory without first showing the site is safe." He stood down as chairman, and the issue remained unresolved under the incoming Labour government: Nirex was in due course superseded by the Nuclear Decommissioning Authority.

Morris was appointed CBE in 1985 and knighted in 1992. He remained active in business and public life long beyond retirement age. From 1996 he was chairman of Independent Power Corp, which runs generating stations in remote places from Central Asia to South America, and from 1997 he was chairman of M40 Trains, the operator of Chiltern Railways.

I got to know him when he was a member of the advisory board of M.W.Kellogg Ltd, and found him to be a very nice chap and someone who was always keen to help and pass on his knowledge experience to others.

Our industry, rather surprisingly, is not one that has provided many knights of the realm considering the staggering engineering and export achievements. Sir Ian Robinson (Kellogg, Parsons, John Brown) received his award for services to the electricity industry.

There are few others who have received other awards, who I have worked with, including the late Ted Bavister and Sid Fudge. There as another chap who received a CBE who was something to do with one of the major E&C companies, can’t quite place him - even my memory lets me down once in a while. I am sure it will come back to me and I will include it next year.

A little further a field many of us were delighted to hear that the JGC Corporation Chairman and CEO , Yoshihiro Shigehisa, had been awarded the Order of the Rising Sun, Gold and Silver Star in May by the Emperor of Japan . The award ceremony was held in the Imperial Palace where the decoration was given by Prime Minister Yasuo Fukuda, followed by a meet and greet session with the Emperor of Japan.

Anyway it’s another example of our industry perhaps not receiving the due recognition it deserves.

**The BOOM and its effects**

It was during 2003-2004 that our industry first experienced very large percentage price increases (often as high as 50-65%) in major materials and equipment supply e.g. structural steel, piping and electrical. This has stabilised somewhat in the past two years or so and is now heading the opposite direction. With industry demand remaining high, shop loads remained stubbornly at + 80% and lead times continued to stretch out in most areas by between 15 and 25% which constrained the whole supply chain. This is now finally changing

The boom continued to roar ahead past the 'first indications that something was wrong' in late 2007 and into 2008. There had been plenty of comments referring to 'indigestion', 'cost and schedule', 'staff shortages' , 'Agency men milking the market' etc throughout this period and then …….. it happened suddenly. It reminded me of the Spanish Flu pandemic of 1918 – people left their homes in the morning perfectly fit and by late afternoon they were dead. Every E&C company will give a different date when and how it happened to them. It could have been the delay in the award of a major prospect, the shelving of studies / FEEDs already in execution, reading MEED (the most informative of our industry mags where many situations are often transparent), or bad news from Canada. In the UK most companies are also seeing declining prospects and workloads, with perhaps the exception of Foster Wheeler.

However there is no doubt that a considerable number of world scale energy projects have been reappraised, some postponed and a few shelved indefinitely.

New GTL projects have more or less died with the indefinite shelving of ExxonMobil and Conoco in Qatar. With the slow start up of the Oryx GTL plant and the other two current GTL projects still under construction in Nigeria and Qatar there seems to be a 'wait and see' strategy before the next major projects get underway. There is the occasional rumour in the press but it seems to be low level activity study activity. Some old hands forecast this was going to happen when the GTL mini boom started to move ahead in the late 1990's. It does of course depend on the price you pay for the gas as well.

Sasol is a leader in GTL technology and for several years, Chevron and Sasol have been in discussions about a joint venture to use the Wheatstone field for GTL. Recent announcements state that Chevron is now planning on using Wheatstone for LNG, not GTL and the LNG site location was announced recently. This project was the only real short term opportunity so there are unlikely to be any new projects until the current batch are completed and running successfully.

We are all awaiting James Alexander Gordon reading the final results from Qatar and Nigeria (to those Brits on my list he is a very well known character from the sporting broadcasting world. Many of us wait with baited breath every Saturday evening at 17.00, as we are driving away from soccer matches taking place the length and breadth of the UK, for Alexander's first reading of the day's results in the 4 Divisions of major English League Soccer. I have friends sitting in site locations all over the world who tune in to the BBC World Service to receive the same information (one particular fellow who I correspond quite regularly, a BP man based in Indonesia and a rabid Burnley fan) – even in the world of the internet this is the only way to receive

the results – the opening music (unchanged since the late 1940's followed by the perfect, old fashioned delivery fully enunciating the surprise away win or boring 0-0 draw.) It will make for an interesting reading.

Still all is not yet lost for the FT Process. When I was a lad, the UK and West Germany both produced 200 million tonnes of coal a year, in Germany it was sub bituminous lower grade coal and in the UK the harder better quality coals held sway. I recently checked the current production levels of those two countries and 10% of early 1960's production is all you would get, in a good year. There is still plenty of the stuff about and most if it mined in open cast areas in the USA, Australia, China, South Africa Indonesia plus a few other countries and once again it is being put to profitable use.

I still know a few 'old hands who worked for Fluor on the 'Coal to Liquids' plants in the 1950's through the 70's and they have always said what great days they were and would never happen again! Well as we know, the excitement of our industry is often 'you never know what's around the corner'? So here we are and 'King' coal is back on the agenda – some of the major oil & gas companies, especially Shell are already developing a number numbers of plants in China, both CTL and CTC and Sasol are looking at studies for plants in South Africa – recently announced by Foster Wheeler.

The former ENI-led consortium (now led by Shell) that is developing the giant Kashagan oil & gas field in Kazakhstan - the world's biggest oil discovery in 30 years - has already been delayed from 2008 to 2010 – although the FEED is finally stuttering into action, with the triumvirate grouping of Worley Parsons, CBI and Aker Solutions. .

Sceptical eyes are also turning to ambitious LNG projects in Nigeria. With a fifth of the country's oil output shut by militant attacks, analysts and investors are questioning the prospects for Brass LNG and OK LNG, worth a combined $20bn. ENI, Total and ConocoPhillips are partnering Nigeria in Brass, and BG Group and Centrica may join. We hear that OK LNG is a dead duck or if still twitching we see it falling back in the pecking order to live again another day.

So we have had major cost escalation, massive congestion and a shortage of resources both in engineering and construction. In spite of all of this there have been some huge projects awarded – especially in the Middle East where the Petrochemical Sector has come up trumps with a number of Worldscale Petrochemical complexes consisting of massive Ethylene plants with all the 'trimmings', Add to that the planning of three or four vast refineries (some of which are already underway but others are already being delayed or even curtailed).

So what does this mean in respect of resources both human and material for our industry? I must apologise for keep returning to resources but this is the crux of our current problem – battle hardened experienced people. I have already mentioned development and retention but there still remain thousands of qualified young engineers located in India, China and SE Asia populating the high value engineering centres in ever growing numbers It is clear to me that the E&C UK Hydrocarbon resource base is going to have an upper limit of around 18,000 and any future

increases will come from the HVEC areas – in fact we could see a reduction of the UK numbers as the recession begins to make inroads on the numbers of employed staff. .

On the material & equipment side we must continue to expand strategic supplier alliances and low cost global supply arrangements in China and other low cost countries.

Construction remains the other major if not most important current challenge. The recent upturn in workload has hit the construction sector after the design and supply side of the industry. We have seen a number names bidding for and winning construction contracts.

We should ask also, what are our clients doing to alleviate the current problems? Well there are probably far fewer contested projects than there were and certainly with smaller medium sized projects when starting with a Feasibility Study, there is then a much better chance to aggregate the FEED/Basic Engineering and into the Execution phases. Most client companies have recognised that the E&C markets have changed and they have adapted and /or modified their approach to projects. This has been particularly noticeable in a number of Middle Eastern locations.

With mega multiple projects a mixture of program management, EPCM and EPC approach with appropriate CM or C scope to suit local market conditions is another way forward where the potential risk to both client and contractor is so high that a more balanced view has to be taken.;

Above all, work with the E&C contractor and suppliers as “partners” and ensure alignment on desired project outcomes underpinned by a fair and balanced contract with incentives to strive towards positive results.

To ensure success both client and contractor needs to invest a lot more in training and development to ensure the required quality standards and local content requirements are met. The obvious areas are the training and development of local resources, importation of skilled labour and in some cases EPC direct hire of construction resources – some contractors like Bechtel and CB & I already do this.

The low hanging fruit areas are off-shore engineering and work sharing, global sourcing of equipment and materials and off site preassembly and modularisation?

I will now turn to review Europe and the UK generally with a direct focus on the E & C companies located in this region, which when you tot up the numbers is still the major region for global key resource numbers and is in the most favourable geographical position for executing projects in Europe, Africa and the Middle East and even Australia when you compare location with the USA. However cost factors have worked against Europe during 2007 – with the weakness of the Dollar against the UK Pound and more specifically against the Euro, hourly rates in the USA are were very favourable when compared with both the UK and Western Europe with the UK gaining a 20% advantage against the Euro during 2007. However in the last quarter of 2008 we have seen a major change in the US$ v UK£ rates of exchange bringing

the UK back to a favourable hourly rate when compared to both $ and Euro, with the US$ making a recovery against the Euro until another decline in past month or so.

There is no doubt that resource levels, both numbers and quality has remained the major challenge for the UK & European E & C industry in the past year and it has to be said that the industry has faced up to this challenge in a very positive way.

2007 saw total staff numbers in the UK E & C industry increase yet again and stabilise at similar levels in 2008 – where have they come from? There has been the usual ebb and flow of agency staff from contractor to contractor as their workforces move up and down to match the start and completion of major projects. Major companies have looked outside to related industries to hire project controls, procurement, engineering and even some project managers. In order to continue to recruit quality engineers from other industries, we need initiatives that will communicate with and aim to attract engineers in industries such as manufacturing, aerospace, marine and construction.

Additionally several hundred international staff have relocated to the UK and these efforts coupled with numbers of 'veterans' and new hires from other industries has enabled the UK to increase staffing by approximately 2,000 staff in the second half of 2007 through mid 2008. We are now seeing the reverse movement with the drip feed reduction of Agency staff in most UK companies  the next three months or so will tell us whether this trend will increase and start to include permanent staff as well and develop into a 'Mid 80's' rout. I believe the latter is unlikely as we have the London Olympics, major Infrastructure projects and the Power construction programme ( both Conventional & Nuclear) plus world energy demand is much greater now than it was 20 years ago. There is of course a massive reduction in the fortunes of the Building and Automobile industries in the past six months and this is already reducing demand for Petrochemical products - the news is similar from China.

There is however much more needed to be done as we face up to the acute skills shortage in the UK energy  industries and stark warnings have been issued about the real threat to our industry that unless more professional engineers and graduates are recruited and trained we are facing tough times. The numbers of graduates joining the industry however has never been higher and also major efforts are being made to train technician level people who will go to college at the age of 18 and work on a sandwich course basis whilst training such areas as Designers, Planning, Cost Control, Estimating etc.  Construction skills and numbers are continuing to erode and it has been noticeable recently that for major UK projects large numbers of European construction workers have been shipped in to execute the major workload increase in the UK based construction work. It is also evident that the UK no longer has the trained construction staff to work on international construction projects so the need to train local staff for construction supervisory positions has never been greater – as highlighted in my opening remarks. With the large conventional power and nuclear programme now in the planning stage this demand will become even greater. We are seeing major schemes in the concept stage but more concrete activity is required.

So its back to the very real challenges of low profile, skills shortages and the development of new technology that are constraining our ability to capitalise on a market which is set to show continued growth in next couple of decades. 'Its not if, its

when; we face a ticking time-bomb over skills shortages, caused by an ageing workforce coupled with a lack of young people coming in to science and engineering careers'. Our industry is one of the most exciting industries to be in and we need to help get that message out there. It is an incredibly complex and challenging sector with rewarding and long-term career opportunities but few are aware of this. Helping the sector attract and develop people, including mature and young engineers and graduates, is a key priority for us.

The churn rate that the industry has seen in the past few years has sometimes meant that companies have had a net change of 50% of their staff over this period, turnover has remained too high although has reduced somewhat in recent months. Salary inflation (mainly Agency Staff) had never been higher and staff salaries had also started to follow albeit at lower levels. These conditions brought the return of good times for employees, both staff and agency, which when you consider that some of whom who have experienced the closure of final pension schemes to new employees in the past few years and in a few cases the total closure of their pension schemes altogether was very good news. Another welcome return (that's if you are a 'key' employee) was the golden hello / handcuffs. We were hearing of instances where some companies offered 'golden hellos' of £30k and upwards + other attractive fringe benefits. This is probably all but ending now with the exception of one or two 'special cases – it will of course return in the future.

Aggressive poaching was rearing its head as we entered 2006 and continues even now – it's always been there – wish I had been poached a few times myself, I've just been scrambled. It has reached new levels of aggression, deviousness and at times 'sheer cheek'! The UK E&C industry may soon be looking at a Houston style E & C labour force, although moving around from company to company will still be dictated by more difficult transport links and the gradual grid locking of South East England. There are very few Interstates in Middlesex and Surrey!

That there has been a massive boom, there is no doubt, but how long did it last, will last is another matter – it's almost certainly over. There is a view in many quarters that in some areas – probably petrochemicals that many of the major new complexes have now been contracted and a number of the clients are already talking about battening down the hatches ahead of the recession. Ineos have been shuttering plants in the USA, BASF are making massive cuts and the big complexes in the Middle East have yet to come on stream. With the continued uncertainties of final material costs and schedules coupled with uncertain quality of construction companies, closing contracts whilst mitigating risk continues to slow the level of project awards down considerably. With refining it is the faltering margins, coupled with high capital costs which are leading to a number of cancellations or at best major sanction delays.

In short 'Why should I proceed with my project now, lumbered with a TIC Cost Estimate concocted at the peak of the market when if I wait a year or so the material and equipment costs will be much lower, even the engineering services will be lower and of main importance I can select a construction company from the Premier Division who will have his best squad available' Very simple but makes a lot of sense. So we can see delays of up to a year due the above reasons.

**The COMPETITION in the UK & Europe**

Last year I focused heavily on the offshore industry and its (relatively) short history but huge influence that it had on the UK E & C industry. That of course is ancient history, but UKCS activity has still chugged along in Aberdeen where there is still a lot of ongoing work much of it related to operations and ongoing services work. You will still see the famous names employing several thousand staff in the 'granite' city – AMEC, The Wood Group, Aker Solutions and smaller but growing companies such as PSN, Petrofac, Genesis, Mustang and of course numerous oilfield services companies who we have never considered part of the E&C fraternity – quite rightly I would say. You won't find either McDermott or Brown & Root represented – yet it is only 20 odd years since they both ruled the roost in Aberdeen and strutted their stuff up and down Union Street or in some case 'zig zagged' their way. There remain a few green shoots in parts of the UK sector of the North Sea and these are generally contested by companies such as KBR, CB&I, Petrofac, AMEC and coming up on the rails Mustang. The remaining few bright spots for UK Engineering are the Caspian, where Azerbaijan remains a happy hunting ground for KBR in Leatherhead where the work has flowed solidly through their office. Add to that Angola, Kazakhstan and Australia and the old Brown & Root legacy lives on in engineering at least.

One major global recovery situation has been McDermott (one of the two famous old names of the offshore Industry). They seemed dead and buried a few years ago but have made a major comeback and the secret is 'If you want to be a big player in the offshore industry you need kit (and be able to utilise it in the right places). McDermott have maintained their yards in a number of international locations. They also have Babcock & Wilcox as a counterweight to the offshore industry – they are heavily involved in the Power business and will surely take part in the upcoming Nuclear & Conventional power build in the USA and possibly farther afield.

Petrofac has also continued to plug away in this area and is a competitor in studies and front end but has had some recent setbacks and with the release of 150 Agency Staff two weeks ago the dream of EPCM work in Woking is surely dead? At the peak the office boasted well over 500 staff and ambitious statements were made of future growth – staff left the majors in droves to join the road to Agency riches. We warned them of the fragility of offices living off studies and front end design work only and the short duration but as usual they drove through the amber lights and thought only of the +£70 hourly rates on offer. There is something to say for solid companies with experienced managers and reasonable longer term workloads.

AMEC, SNC Lavalin, CB&I, Mustang, SLP and Genesis remain as the other London based offshore aspirants – CB&I and d AMEC have solid experience, real experience the other four are some way behind.

SNC Lavalin has a small office in Croydon, once a major offshore centre but is now just hosting 150 staff pursuing in the main work in Russia.

Mustang, nestling under the Wood Group umbrella, is also located in Woking and is tackling mainly small North Sea work – studies and FEEDs and executing some procurement services and detailed engineering for small platforms. Their Aberdeen office is much larger and has in the recent times executed some substantial work.

SLP a SW London design office of the Lowestoft Module and small jacket fabricator are struggling along with work from Libya but I hear it is a struggle.

Genesis, tucked in nicely on the borders of Covent Garden and under the ownership of Technip are a solid 200 staff front end operation with a good reputation.

Finally we return to CB&I who have an ongoing business in the North Sea, but not so much in the UK Sector. Through its previous owners Aker, they had executed quite a bit of work in the Norwegian sector and this continues today with some recent Ekofisk work, but sadly I hear that some of this work has recently been suspended. They have been executing work for EnCana (now Nexen) since 2001 and have been working on the Buzzard Development and its expansion – this could be the final major UK North Sea project that this once proud leader in major offshore structures executes ending an era that began with the Thistle Field for a long gone company with an unlikely name, the Halibut Group for Signal Oil who were subsumed in fast order by BNOC, Britoil, BP and now operated by Lundin Oil a 35 year story. The Thistle story is typical of the story of the UKCS – oil discovered by tiny minnow company who did not have the funds to develop it sold on the operatorship and bulk of the reserves to a larger company – in this case a state controlled upstream company and Conoco who hired in staff from other oil companies and then floated it on the UK Stock Market in 1982 where it stayed until acquisition by BP in 1988. BP squeezed as much out of it over many years until it no longer met their investment criteria (along with many others) and was sold onto one of the smaller, nimble companies who would be able to run the field and its satellites more economically and develop further subsea step outs to flow through the main trunk line to the Sullom Voe oil terminal to keep the oil volumes up at a reasonable rate.

Gas Storage is another growth area of business in the UK, especially with the clocks ticking towards ‘Lights out in the UK’. In the UK, gas storage capacity is only about 4% of annual demand, compared to more than 20 % in Germany and France. Depleting North Sea gas supplies have brought reliance on gas from places such as Norway, Russia and the Middle East. Any interruptions to these supply lines results in a significant spike in the prices to UK consumers.

Gas supplies from around the UK are declining at an average of 7% every year, yet our gas demand is continuing to rise. It is predicted that 80 % gas will be imported by 2015. The push is on to increase gas storage capacity in the UK and COGAP is at the forefront of the work. Typical locations for these storage areas include salt caverns; disused coal mines and played out offshore oil & gas fields.

Globally, there are more recoverable reserves of natural gas than oil on an energy equivalent basis. As much as a third of the reserves are too remote to justify access by pipeline and a half of those are off-shore.

It was in fact John Brown who worked on the first Gas Storage project in the UK between 1980 and 1985 for BG. This was renovating an old gas field offshore Easington and turning it into a twin platform summer storage facility. This was one of the most amazing projects I was ever associated with – talk about mega millions hours spend!!!! This was awesome – JB were the PMC and bid 400,000 HOS Open

Cost Reimbursable and ended up spending 4 to 5 Million and every UK design house and fabricator had a part to play. These were the days of a State Owned Gas Company and the need for 100% UK Based Content – Worley Engineering, Taywood Santa Fe, Protech, and a number of other design houses executed the engineering. There was another PM Company called Pasco Engineering looking over John Brown's shoulders, and numerous Module and Jacket yards fabricating the kit including Whessoe, Redpath Offshore, Cleveland Offshore, Charlton Leslie, McDermotts, RGC, Burntisland Shipyard and one or two others – it was amazing ! Every single fabrication yard in the UK had a small slice of the action – one of the most inefficient ways of executing a project I have ever scene. From Wick to Lowestoft everyone had a piece of the action The project costs ended up several times the original forecast and 25 years on only the John Brown Office is still operating and I believe all of the fabrication yards have closed log ago – as the chap with the double barrelled name said, *I* remember now it was John Mayhew-Sanders, the last ever CEO of the revered John Brown Company.

Anyway back to Gas Storage – a mini business in its own right with Penspen, Costain Oil & Gas, AMEC, Jacobs and CBI all involved in either FEED or EPCM activity. There should be quite a few of these projects in the UK over the next few years and hopefully they will be more successfully executed than BG Rough Storage all of those years ago. At the moment there are perhaps between 5 and 10 in the planning for FEED and Execution phases with more to come. As a shareholder in one of the developers I am hoping for some early progress as I am currently considerably out of pocket (well I was until today when their stock rose by 62%). It is likely, however, that a number of these will end up in the ownership of the major energy companies such as EDF, S&S, Centrica, E.On, RWE or even Gazprom – now there's a thought. These are the companies who will ultimately control the destiny of our future power supplies.

Last year I had much to say about Samir Brikho the former Chairman of Lummus who had just turned up as CEO at the sprawling, erstwhile aspirant AMEC. It seemed even then that Brikho had already grasped the nettle in his new role and seemed certain to carve out a reputation whether that was positive or negative remained to be seen. I left you with a few words from Mr Brikho and his vision for the future of AMEC. Depending on where you fitted in Samir Brikho's scheme, he was either your new pin-up or your worst nightmare. The former ABB executive took charge of Amec in late 2006 and quickly cut £20m of costs. By the end of 2007, he forecast he would knock off a further £80m – about a fifth of the total. Amec would have a "lean and mean headquarters, very slim, very small", he said.

He "eliminated regional headquarters in UK and North America", "controlled travel" and "curtailed entertainment". Cutting costs would be so easy he said, he wouldn't have to do it "by picking the low-hanging fruit" – the fruit was so low as to be "lying on the ground". Amec, for example, had four offices in London alone and 112 in the US, he said.

Analysts and investors lapped it up and so did I, I have to admit. Yes I purchased stock and did very well – sold a month too soon but after the froth generated by the Wood Group merger / acquisition rumours they have not really moved much higher.

The aim was to become a leading supplier of high-value consultancy, engineering and project management services to the world's energy, power and process industries." Lots of analysts like me seemed to be impressed. They described Mr Brikho as “a breath of fresh air” for the way he honestly appraised the group’s liabilities and bloated cost base.

So how did it happen – ‘disposals old boy’ and lots of them (many I must be frank I had never heard of!) Names like Buchan Concrete Solutions, AMEC Dynamic Structures, Built Environment Division, Midwest Pipelines, and SPIE Capag pipeline construction, Project Investments, Logistics and Support Services (ALSS). There have been a few small acquisitions as well – none terribly substantial, but did include a decent sized engineering company in Chile and Bower Damberger Rolseth Engineering Ltd., a specialist 'in-situ' oil sands business, from its owner-managers for C$45 million cash ( that may seem a rich price into today’s market.)

With a new Strategic Acquisition Director being appointed and with a hefty ‘war chest (probably in the region of $1 bn) it may not mean buying the Wood Group, which was always a deal that may have finally created a ‘UK Upstream Titan’ but there would have been many overlaps and all the problems that we know can derail an otherwise sound deal and certainly confuse Mike Straughen!  Companies were paying top dollar for most acquisitions so Mr Brikho will need to be mindful of history and do his research carefully - the company is now far more focused and than it ever has been has won some decent business. The last UK Titan was the John Brown / Davy merger and look how that ended up ultimately.

They produced some very good numbers in 2007 with strong performances by all the group’s three core divisions and an adjusted pre-tax profit for the year of £344.4 million (2006: £219.2 million) with a 5.1% EBITA margin (2006: 4.1%) and on track to deliver 2008 upgraded margin target of 6.85%. The 2010 target is 10%.

Some modest acquisition (£200 million) was also promised in 2008 – they were ultimately modest in their final achievement with seven companies coming in for an aggregate consideration of £110 million in the first half of the year – Rider Hunt was the only one I was familiar with. Many of us of course believe that there may a larger acquisition in the wind and still do although it will be in 2009 and not 2008.

The stock began 2008 at £8.00 rose to just shy of £10.00 and then fell back to £4.00 and have clawed their way back to £5.30. The interim report for 2008 was upbeat, with annual Revenues forecast in the region of £2.55 bn and with a record Pre Tax profit of £90.4 million in the first half of the year the situation is looking quite good.

With a major UK Nuclear new build programme in place for the next 20 years you can only see AMEC’s fortunes improving given their global nuclear heritage.

As I said last year ‘If success was measured on the number of Press Releases issued AkerKvaerner would win the prize hands down after 99 announcements from the worlds most creative PR Department – well in 2007 another 70 came from the pens of the Oslo scribblers increasing to over 90 this year, but the action has been in the corridors of power within Oslo at both company and government level.

Aker Kvaerner posted record financial results for 2007, recording a 90% rise in net profit from $114 million in 2006 to $450 million. The strong performance, described by the company as “the best year ever” was largely on the back of solid performances within its subsea and process and construction businesses. Operating revenue increased by 15% year-on-year and came in at Nkr 58 billion, compared to Nkr 51 billion in 2006. This was almost certainly the peak for the company for as we will see since then there has been a noticeable decline and in no way differing from other E&C Sector companies the stock has tumbled in the 10 months since this announcement.

AK also went through a major rebranding exercise in April 2008. For over 150 years, ‘Aker Kvaerner has delivered solutions for some of the world's most complex engineering and construction challenges’ they stated. ‘The name Aker Solutions represents a simplification and strengthening of our corporate identity and outlines our offering of comprehensive industrial solutions. It identifies our connection with Aker, a large industrial group with operations in industries and sectors with which we are engaged. It communicates the long term committed ownership of Aker, our synergies with other Aker companies and between our business units and business areas. So there you are, the name Kvaerner is no more – not a bad idea I suppose as the brand had been badly damaged by the acquisition of the UK Trafalgar House company in 1996 which was part of a the major expansion strategy of the late 1990’s.

Anyway back to the corridors of power. There were major senior management changes in 1996 but it seemed we had reached a period of stability under CEO Martinus Brandal. However by mid 2007 we started to see some further changes in shareholding, structure and senior management.

First of all we were all surprised but the following announcement: - Aker ASA, Investor AB, SAAB AB and the Norwegian State have signed an agreement which will ensure a long-term, strategic ownership of the Norwegian industrial group Aker Kvaerner. Aker majority shareholder Kjell Inge Roekke is satisfied. This was announced by Norwegian Minister of Trade and Industry, Dag Terje Andersen, at a surprise news conference. - This is a historical agreement which will give Aker Kvaerner a long-term ownership and which will ensure that strong Norwegian industrial expertise remain based in Norway, the Minister said. Aker Kvaerner has transferred its shareholding of 40.1 per cent in Aker Kvaerner to the newly established company Aker Holding AS. Aker will be the largest owner with 60 per cent of the shares, while the Norwegian State will have a 30 per cent ownership of the new company, and SAAB and Investor will together own 10 per cent. According to the agreement, the owners of Aker Holding have a mutual obligation to keep the shareholding in Aker Kvaerner for a period of at least 10 years. The Ministry says this will ensure a stable and long-term ownership of an important Norwegian company. Aker Kvaerner will remain under Norwegian control and will keep its headquarters in Norway for at least 10 years. - At the same time we are establishing a joint ownership between Norwegian and Swedish companies, which may be the basis of further industrial cooperation in the years to come, Industrial Minister Andersen says.

What did it all mean? Rumours were rife of a Pan Scandinavian solution backed by sovereign Government guarantees and major companies taking shareholdings to ensure that rumoured incursion from the NE flank was nullified. Sure enough, a few days later Norwegian government ministers openly said that they feared a Russian takeover and that this was one of the reasons why they decided to place a 6.5 billion NOK investment in the company. In the background lures the huge oil and gas reserves in the Barents Sea and the fight for the technology and know-how on how to develop them. It also meant that the Wallenberg family, via their ownership of Saab and Investor had bought a stake in a key Norwegian company.

Then the Senior Management changes came, but keep an eye on the cast of characters involved. Pål Helsing has been appointed Executive Vice President for Aker Kvaerner's Business Area Field Development, succeeding Simen Lieungh. In this position, Pål Helsing will be a member of the Executive Management Team reporting to Martinus Brandal, President & CEO. Simen Lieungh held the position as EVP for Field Development since 2002. Prior to this position, he held a number of executive management positions within the company. Lieungh is leaving Aker Kvaerner to accept a position as Group Managing Director with the shipping, offshore and oil services company Arne Blystad AS.

Acquisitions to complement its existing businesses, especially in subsea oil and gas production equipment and drilling were being lined up. Such acquisitions could be worth from as little as $10 million to up to more than $100 million. They had pinned hopes on providing its services for the development of Russia's vast Shtokman gas field in the Arctic, in which France's Total has been chosen by Gazprom as a western partner.

Then only a few months another about turn as we learned that Aker Kvaerner had appointed a new chief executive and was to change it name later this year to Aker Solutions. Current president chief executive Martinus Brandal said: "The new name, Aker Solutions, represents a simplification and strengthening of our corporate identity, and it outlines our offering of comprehensive industrial solutions." Brandal will be replaced by Simen Lieungh as president and chief executive in March. Meanwhile, Brandal has been nominated as the company's new chairman. "I look forward to becoming the first president and chief executive of Aker Solutions," said Lieungh. "In a way the new name also marks a symbolic conclusion to the highly successful integration of Aker and Kvaerner, which started in 2002." The proposed name change was approved the company's ordinary annual general meeting on 3 April. So Lieungh returns – only six months after departing.

What is also clear now is that Aker Solutions has been moving further upstream over the past year or so with 90% of their press releases referring to drilling, subsea and other offshore related projects. The refining, chemical and mineral & metals sectors received little or no mention during 2008 giving most of us the impression that Aker Solutions was moving back to its legacy area and that Aker Solutions must eventually be renamed Aker Offshore Solutions.

The financial outlook has also deteriorated somewhat during this period. Aker Solutions said rising costs and rig delays hit third-quarter profits. Aker joined other

leading firms servicing oil and gas producers to post disappointing third-quarter earnings, accelerating a slide in sector valuations triggered by a months-long decline in oil prices. Operating profit and net profit both missed consensus forecasts. Aker's operating profit rose 9.8% to $142.2 million) in July-September, below the forecast Earnings per share fell, hit by cost overruns and delays in a rig project as well as currency hedging costs coinciding with a weakening of the Norwegian Crown.
Aker Solutions tried to reassure investors that a rise in its order backlog boded well for future business, and Chief Financial Officer Leif Borge told a news conference that "in the fourth quarter we expect revenues to rise again."

Chief Executive Simen Lieungh said oil prices at then current levels of $60-70 per barrel would not derail big developments but could affect more speculative projects. "A low oil price now with today's cost base is $30-40," he told reporters – well Simen where are we now? CFO Borge added: "We are more uncertain on turnover, but more confident in margins ... (Because) on turnover we are more dependent on other parties' decisions." Lieungh said Aker Solutions would be more cautious with mergers and acquisitions due to the financial crisis but said he did not expect many of its clients to be squeezed. "Many of our customers are big, self-financed oil companies. We have not experienced any problems as of today. Our EBITDA is the highest ever and ... we have turned the trend of a falling order backlog," Lieungh said. The sector's valuations have swung wildly along with turbulent markets and the oil price, with Aker Solutions shares down about 65% over the past three months. That was 6 weeks ago, so we wait the next announcement with keen interest. There stock has dropped a further 10% since then so the 2008 Results Announcement in late February is keenly awaited.

Life go's on though and in July Aker bought Aberdeen-based well services company for $197.2 million. Qserv is a privately owned company established in 2001 with around 400 employees. As well as the North Sea, Qserv has also operations in West Africa, Middle-East and South East Asia.
The company provides a range of well, process and pipeline services. Revenues in 2007 stood at around $500 million

Whilst all of the above has been happening it has been very much business as usual – lots of offshore related awards in the Norwegian Sector. Large amounts of work helping Linde complete the Snohvit 1 LNG project – which is still ongoing. The partnership with IHI, the respected Japanese Tank contractor, has not really progressed that much in the year – one award and one cancellation – both projects in the USA. If and when (I suppose it must be when) the Shtokman LNG project finally gets underway in the next 5 years or so this hard earned experience from the Northern Cape and the good relations that the new O & G Titan StatoilHydro has forged with the Russians may begin to pay dividends, although there was nothing directly for Aker in the initial FEED awards. Offshore Engineering & fabrication will always be its flagship activity, but that is no bad thing into today's environment where hostile Arctic conditions spell the future challenges for many in our industry.

In the UK, Aker Solutions still maintains an office in the Port Solent area near to Portsmouth. This office, operating in the range of 250 to 500 staff and reporting into the Dutch office at Zoetermeer is involved in PTA work utilising Dupont Technology, mainly for plants in far eastern locations, a Polypropylene project in Fushun, China

utilising the Dow Unipol PP Technology and is also working with Worley Parsons and CBI on the huge Kashagan Full Field FEED Development, which for Aker could be a significant workhour generator. Aker's JV with Praj Industries was selected for the front-end engineering and design of the UK's new bioethanol plant, planned by a consortium of BP, Associated British Foods Plc (ABF) and DuPont which could be a major new business line for this office.

The Zoetermeer office continues to execute projects in the Benelux and German regions and in 2008 won several engineering service contracts with German Refineries plus a number of smaller chemical projects in Benelux. But it has to be said they are pale shadow of the office that as once 'bossed' by Aad de Ruyter in the 1990's.

Staying in the Caspian region Aker has for some years been successfully delivering modules to the Kashagan project and in February bought Finnish engineering company RR. RR Offshore is a Finnish engineering and project management company with experience in Russia and the North Caspian region. Aker now has full control of the company, up from a previous 26% stake. "Aker is actively positioning itself for future projects in Russia and the Caspian region. The acquisition of the remaining shares in RR Offshore will support the execution of Aker's strategy and further build on our Russian activities," Aker said in a statement.

There is another Aker unit in the UK based at its new head office on Surtees Business Park, Stockton on Tees. After the sale of the maintenance business in 2006, the company has re-established itself as a major enterprise in the region. The company offers total lifecycle engineering services across five business sectors: nuclear, metals, water, process and energy. They have recently added a new service offering to their portfolio with the inclusion of "consultancy services", assisting clients in developing their own environmental management programmes, controlling environmental risk in all stages of their product life cycle, in order to achieve sustainable development.

Recent awards during the past 12 months have included a £26m contract for a new Combined Heat and Power project for SembCorp Utilities at Wilton. This was followed by the award of a £28m contract from Northumbrian Water to extend the treatment capabilities of the existing regional sludge treatment centre at Bran Sands on Teesside. Also in the last year, the company was awarded a £16 million contract to design, build and install a plant for the retrieval and encapsulation of wet intermediate level waste at Hunterston 'A' Site in West Kilbride, Scotland for Magnox Electric Ltd. These contracts are in addition to a multi-million pound order for Iberian Minerals Corporation's new processing plant at its Aguas Teñidas mine in Spain. Work also continues on a multi-million pound, engineering term-services contract with Chevron Ltd, at the Pembroke Refinery in Wales.

In the USA Aker Solutions and Synthesis Energy Systems, Inc., a global industrial gasification company entered into an engineering agreement. They stated that Aker Solutions expertise in the gasification and chemicals industries will assist SES' strategy to build own and operate coal-to-chemicals plants serving the industrial customer segment worldwide.

An interesting development has been the creation of Aker Clean Carbon. Aker Clean Carbon was established in 2007 as a wholly owned Aker subsidiary. For nearly a year, Aker Kvaerner, with funding provided by Aker Clean Carbon, developed detailed plans for building of its first carbon capture facility. The technology that underpins Aker's targeting of CO2 capture, named 'Just Catch' has been developed by Aker Kvaerner over several years. Aker recently decided to organize its carbon catching activities in a separate company. An agreement has been entered into to merge this company with Aker Clean Carbon. Although it did pull out of a project to build a carbon capture demonstration plant in Norway, citing uncertainty about supplies of flue gas. The demonstration plant in Karsto is one of a number of European projects aimed at fine tuning technology needed to capture and then store exhausts of greenhouse gases. Aker Clean Carbon is also the technology provider for a Scottish Power Generation group on the short-list to build in Britain the world's first commercial-scale fossil fuel-based power plant with carbon capture capability, the first full-scale project where the whole value chain, from capture to transport and storage, is included from the beginning. Certainly as a technology holder and being a Norwegian Company should position Aker to be a major global player in the CCS business, should it finally take off and become a major international sector of the E&C industry.

In the USA the Metals Division continues to work out of Tucson and San Ramon and has signed an agreement to perform EP services for the design and installation of the Safford acid plant and area improvements. The acid plant, located in southeastern Arizona, is owned and operated by Freeport-McMoRan Copper & Gold Inc – this is typical bread & butter work for Aker in the Sulphuric Acid area where they have many years experience utilising the old Davy Non Ferrous Metals division resource.

Also located in the USA is Aker's Plant Services business unit, whose main operations are in Charleston, West Virginia and has several locations in North America/USA and is currently delivering projects with the BE&K alliance spanning from Parkersburg, West Virginia to Deer Park, Texas. Aker Kvaerner's Plant Services employs approximately 580 multi-discipline employees and the alliance with BE&K dates back to 1997.

Summing up a very complex period of emphasis and change one cannot fail to observe that Aker is becoming more and more an upstream, mainly offshore, company – the company has massive global reach and is truly Norway's representative in the upstream offshore world. Norway is a major global player in the world of oil & gas and will continue to promote its 'nationalised' company as their flagship supply company in this sector.

This leaves us with the remnants of the John Brown / Davy companies in the USA, UK and Europe focusing on Minerals & Metals and Downstream Refining & Chemical business. There long term future within this upstream 'Titan' must be now doubtful – could be an acquisition target for an E&C company looking to establish a bridgehead in these regions and areas of business. In my view it would be easier to sell M&M and Refining & Petrochemicals as separate packages. Watch this space.

Whilst we are in the Norwegian theatre we should mention both Acergy (formerly Stolt) and Aibel (formerly Vetco Aibel and before that Umoe) both now in Norwegian hands. Acergy have experienced some strong trading and reported a 38% rise in pretax profits for the third quarter, against expectations for a drop, and said the fundamentals of its business remained "robust". Pretax earnings rose to $161.6 million in the three months to the end of August from $117.1 million in the same period last year. The news from Aibel has not been so promising after it was sold to an investor group in a US $900 million deal. Candover, 3i and JPMorgan Partners sold Aibel to an investor group led by Norwegian players Ferd Private Equity Fund II. It then opened an office in Petersfield, UK to service its lucrative 5 year Algerian project for BP, Statoil & Sonatrach for the In Salah and In Amenas gas fields. Add to this the ongoing work it executes for StatoilHydro in the Norwegian Offshore Sector and the carbon capture award at Mongstad for Statoil Hydro. In June 2008 it had some serious governance problems The Board of the Aibel Group is not satisfied with the Company's performance relating to improvement of compliance and operational controls, and has asked the CEO, Rasmus Sunde, to resign. The Company has not been successful in implementing its Compliance Code and Directives, a core responsibility for the CEO. At Aibel, the Compliance Code and Directives govern the business conduct for all its business areas, including due diligence of 3rd parties, compliance with legal requirements in all its contracts, as well as making sure the employees understand the Company's ethical and moral responsibility.

Six months later following a court proceeding for Aibel Group Ltd. on November 21st in the United States District Court for the Southern District of Texas, Aibel Group Ltd. received a capital injection of NOK 600 million from its owners. Aibel was restructured into two separate entities, Aibel AS and Aibel Group Ltd., with separate management teams and board of directors. Aibel Group Ltd. pleaded guilty to two violations involving the U.S. FCPA after having reached a plea agreement with the United States Department of Justice, Fraud Section ("the DoJ"). The charges related to the 2002 to 2005 time period. In connection with Aibel Group Ltd.'s guilty plea to the two charges, the Court imposed a fine of USD 4.2 million and placed Aibel Group Ltd. on probation for two years.

After the guilty plea and imposition of the sentence, the Court terminated the previously executed Deferred Prosecution Agreement ("DPA"). Aibel AS was separated into a stand-alone legal entity with continued focus on the Norwegian market. Jan Skogseth will continue to be President and CEO of Aibel AS. Aibel Group Ltd.'s Board of Directors initiated a strategic review with the local senior management of Aibel Group Ltd.'s various international businesses. Jo Lunder was appointed Executive Chairman of both Aibel AS and Aibel Group Ltd.

When we left Bechtel last year they were about to announce record global numbers. Well their figures in 2007 were even better than ever with global revenues of $27bn and work under contract of $75bn.

In the UK they had their hands full with the Reliance refinery in India and the completion of a couple of Middle Eastern projects without much else on hydrocarbons. We should just pause a moment in Jamnagar however. In both scope and complexity, the project rivals many of Bechtel's previous exceptional

accomplishments, including Hoover Dam, the Channel Tunnel, and the Trans-Alaska Pipeline. JERP has a plot plan bigger than that of London and a target completion time of less than 36 months. Bechtel has been tackling this mega project using engineering resources dispersed around the globe, including a design and engineering team of 2500 professionals in 10 design locations, 19 offices, and eight countries. In total, the project employed more than 90,000 people during construction and call for the fabrication and installation of 101 k metric tons of steel, about five million metres of varied size pipe, more than 4000 pieces of major equipment, and more than 110,000 isometrics.

The areas where they have been really busy in the UK is within their infrastructure and transportation are where Bechtel has been managing three mega projects in the UK :
- The upgrade of the West Coast Main Line $17 bn
- The upgrade of the London Underground Jubilee, Northern and Piccadilly lines $15bn
The Construction of Crossrail $32bn
That's a total capex of $65 bn the equivalent of three mega complexes in Saudi Arabia! The problem with the infrastructure projects they are in the public eye and if anything goes wrong the whole country knows about it immediately, if an LNG plant goes down who ever hears about it ?. Major shutdown work on the UK's railways generally takes place over the weekends and more often over the public holiday periods –so Bechtel has been taking a bit of flak if the work overhangs into the next day when angry commuters and other rail travellers are being inconvenienced – it's a no win situation really.

Their Power side may be reinvigorated on the back of the major expenditure programme underway in the UK for fossil and nuclear powered power plant programme planned over the next 25 years. They are the sort of company who have always had friends in high places and these programmes planned for the UK , USA and many other locations will be a prime target for them, in fact they turned up on an Egyptian nuclear opportunity only last week.

So where does this all leave Bechtel UK Limited? The 2007 accounts have just been released and show a profit after tax for the years of $140 million! Now I think that you sometimes have been somewhat careful trying to analyse these numbers. It's very difficult to know what is really going on inside these companies. All I can say is that there were modest incomes coming in from subsidiaries and JVs but nothing like levels to support the bottom lime profits on revenue of circa $600 million. It is interesting though to live in a country where the annual report and accounts are freely available to a humble observer of the industry like me.

One final observation before we depart from W6 - there seems to have been a revolt of the Bechtel staffers in mid 2008- reported in UK Contract Journal.

'Bechtel UK Executives have told staff its final salary pension scheme will shut on 31 July 2008 and current plan members will then be invited to join a money-purchase scheme. The move has evidently outraged long-term employees who are warning that the project manager faces a brain-drain from its high-profile contracts. Insiders told Construction Journal (The Top UK Construction / Infrastructure magazine) that

many Bechtel workers were now considering going freelance because the pay was better. One source said: "Agency rates have gone through the roof and senior staff and long-timers - who are earning half as much as freelance contractors - have only stayed here because of the benefits and the pension. The market is buoyant at the moment, they want to quit full-time and go to an agency or go elsewhere." Staffers have warned a major walk-out could undermine the company's ability to perform on its major projects. The source said: "What message does this send to the market? It could destroy the core competency of the organisation."

Now some companies can sometimes be in the right place at the right time at around the same time I was hearing rumours that Bechtel were closing down quite a bit of office space in Hammersmith to save rates. It seemed quite strange to me that with the industry still in such rude good health at that time that Bechtel (who are still a relatively major player in the Middle East & with this strong relationship with Reliance) were in this position. Still I thought it was an ill wind as they say.

However it is now clear to me that the ‘rot’ started to set in, in Hammersmith, in Q2 2008 (too many ins Ed). Busts start when the major investing areas i.e the Middle East, India , the Far East start to see ‘grey skies’ ahead and Bechtel , always a major player in these areas suddenly were completing projects but were not back filling with projects of similar size developments. That is not to say major projects were not being let but in the ‘big project game ‘you need to constantly refill the hopper. Bechtel could not do it and others are now having the same problem – the speed of this decline has been amazing by our industry standards but we should have seen it coming in May 2008. Yes most of the Bechtel Agency staff got fixed up somewhere else but probably not for too long.

Another pointer to their plight in our sector was the Chevron Pembroke Refinery Upgrade FEED / EPCM, a medium to large (by UK standards) refinery project being pursued by all and sundry. Now Bechtel had not shown much interest in the UK refinery sector for some years and here they were trying their hardest to win this project, now we can say that Chevron and Bechtel are old friends from the Beal Street days in San Francisco and they were once Chevron’s major contractor, but that was some time ago. The project has not been formally awarded (in the press yet) and it could still fall foul of the slump but I would not be surprised if this project does not ultimately end up in Hammersmith. The last I heard, which is a couple of months ago; there were two shortlisted candidates, with Bechtel the favourites.

However don’t shed too many tears for Bechtel in the UK – as I said there is all that infrastructure work coming and I am sure they will be well placed. Also many of the former hydrocarbon staff have been reassigned to this sector so sometimes it’s an ill wind!

In the global business Bechtel have secured some major projects one being the (EPCM) contractor for the Al-Zabirah aluminium smelter project at Ras al-Zour. Bechtel expects to receive the notice to proceed in August 2009 and the first hot metal is expected in December 2011. Early works packages will proceed before the notice to proceed is issued.

In the LNG area they have quite a promising year with three awards of various shapes and sizes. Queensland Gas Company Limited and Bechtel jointly announced that the Queensland Curtis LNG Project has secured Bechtel Oil, Gas and Chemicals, Inc. as the project contractor for its proposed LNG plant near Gladstone in Australia. The project, an alliance between Queensland Gas Company Limited, of Australia, and BG Group plc (LON: BG), of the United Kingdom, will develop coal seam gas from the Surat Basin in Queensland for Australian and international markets. The plant is being designed with one production train initially to supply 3 to 4 million tonnes of LNG a year for export markets, with potential expansion, via additional trains, to up to 12 million tonnes a year subject to additional gas reserves.

The Angola LNG project was finally awarded when it gave Bechtel's Oil, Gas & Chemicals global business unit notice to proceed with construction of a 5.2 million-MTPA LNG train, along with storage and marine loading facilities for LNG, liquefied petroleum gas (LPG), and condensate. Bechtel, in cooperation with ConocoPhillips under the ConocoPhillips-Bechtel Global LNG Collaboration, has been involved in detailed engineering and procurement for the Angola LNG liquefaction train since early 2007. “The first LNG production is slated for early 2012,” says Bechtel Project Director José Ivo.

LIQUID Niugini Gas has selected Bechtel to carry out the FEED and EPC work for its LNG project in Papua New Guinea. Liquid Niugini's proposed PNG LNG plant near its Napa Napa refinery. The joint venture between InterOil, Merrill Lynch and Clarion Finance has also chosen ConocoPhillip's Optimized Cascade (SM) process technology for the plant design.

If the Brass LNG project were to proceed Bechtel would very well placed for this project – but the consensus is that this is very unlikely in the short term.

The UK (and Manchester based) minnows, Costain and Simon Carves continue to battle it out with the Manchester Mafia which includes the regional offices of AMEC and Jacobs plus Day & Zimmerman. Manchester has always been a major centre of our industry dating back to the days after the War in the late 1940’s when Simons Engineering held sway employing, so we are told, several thousand people. The work was to be had from the local Manchester, Liverpool and lower Wirral areas as the industry built up a head of steam with Refineries, Fertilizer plants and Chemical plants. In Manchester it was Shell and the Carrington site with the ‘mighty Kellogg’, as they were then known, executing Ethylene projects and later on Polymer plants right through until the run down and near demise of this site in the mid 1990’s. That’s not to say others have not experienced good times in the Manchester region – Fluor once occupied the largest office in the city and Petrocarbon were several thousands strong in the golden era of the BNFL Sellafield Nuclear Re processing plant. Today’s numbers are far more modest with perhaps no more than 3,000 staff at peak spread out amongst the five or six companies and that is probably ‘top wack’.

Simon Carves have been passed around the houses in the past 10 years or so initially to Sembawang and now Punj Lloyd are the owners. Their strengths remain in the high pressure polymer plant business which turns over on average a couple of plants per year but even with a major owner it still seems a hand to mouth existence.

They remain a ‘general engineering ‘contractor, but what Punj Lloyd has in store for them is anyone’s guess. We hear that the execution emphasis is moving towards the Middle East where in future much of Punj Lloyd’s EPC execution, outside India will take place. I understand some Brits have been expatriated there to keep a steady hand on the tiller although few are big names in the international E & C industry – we shall wait and see what transpires.

What about Punj Lloyd then? They are the second largest engineering company in India and are present in the infrastructure and energy sectors and have also bagged some large orders in power, oil refining, pipelines and petrochemicals. Punj Lloyd has a number of subsidiary companies, which operate in the countries where it is active. However, the bulk of the difference between its standalone and consolidated figures is on account of a single subsidiary Sembawang, which it acquired in 2006. Sembawang had a large order backlog taken up at low margins — this has impacted Punj Lloyd’s margins for the last two years.

There has been some recent acquisition activity as well. Punj Lloyd Group has acquired a 74% stake in the UK's engineering design firm Technodyne International Limited, based in Eastleigh, for an undisclosed amount. Technodyne is a specialist engineering, design and consultancy company focusing on large scale cryogenic and high pressure tanks. With projects across the world, Technodyne carries out the basic design and detailed engineering for complete steel and steel plus concrete tanks including associated piping, instrumentation and electrical systems. Technodyne also has track record in designing of test rigs. This acquisition is a strategic fit and further strengthens Punj Lloyd's existing tankage and terminal business. Punj Lloyd, which has been the only company to be involved in all three LNG terminals --- Dahej, Dabhol and Hazira, has also completed the cryogenic storage tank package at the Reliance Jamnagar refinery. The acquired capabilities enable the Punj Lloyd Group to provide end-to-end solutions for complete delivery of complex cryogenic, high pressure LNG, LPG, ethylene, ammonia and other similar storage tanks, a significant growth area in Oil & Gas sector. The capabilities will also be leveraged for design of refinery and petrochemical projects. Looks a sound acquisition to me and will certainly strengthen the group considerably.

Punj Lloyd has also been awarded the EPIC contract for a Strategic Gas Transmission Project, worth USD 800 million, from Qatar Petroleum. The project Includes laying of 211 km of pipeline with associated stations and infrastructure. This is a big step up from there usual work and a statement of intent that they are becoming a major force in global contracting. Another statement of their global aspirations are the plans to bid for Singapore's LNG terminal for which it has tied-up with Saipem. This LNG terminal in Singapore is a maiden one for the country and the cost of the project is estimated at $1 billion which is planned to be commissioned by 2011. Besides Punj Lloyd and Saipem, three other global players are reported to be in the race for the terminal project. If Punj Lloyd bags the project, it would be executed through its Singapore subsidiary the former Sembawang office.

Back in the UK we hear that the Teesside LDPE EPC LSTK project that Simons took on some years ago is still uncompleted and continues to be in difficulties and with current staff levels in the company stated to be in the circa 600 range (inc+60% Agency) clearly there has been a lot of effort to close this out asap.

Only last week Simon Carves signed an agreement with Abu Dhabi based Gulf Fluor LLC to complete the development of a sulphuric acid and oleum plant and the utilities for the Fluorides Complex of the Industrial City of Abu Dhabi (ICADII). They have been involved in this project from its commencement through Feasibility and FEED stages. The final phase an EPCM project will be carried out in conjunction with the Swiss company BUSS ChemTech AG as well as local consultants and construction companies. So there is life in the old dog yet! Although with the bottom line oscillating between a £1 million loss and a £1 million profit over the past two years this is not very exciting to an ambitious Indian owner. Which is why we hear rumours of a major transfer of the centre of gravity from Manchester to Dubai?

Costain the other local player has also experienced a rather 'roller coaster' ride over recent times. Several years of losses culminating in a £20 million kitchen sink write off (related to some work in Mexico – what is it about Mexico?) in 2006 has been followed by a £2- 3 million profit last year leaving the company on a much more sound basis. They retain some of their old LNG / Cryogenic skills and have established a niche in the nascent Gas Storage area. The JV (in Facilities Management) with Petrofac appears to producing solid profits but whether it is a partnership of equals remains to be seen. Still its not all doom and gloom in this part of Manchester, they have two major gas storage projects in execution, one for E.ON at Holford, and the other for Gaz De France at Northwich, both projects are located in old salt caverns which are to found all over Cheshire , which has been extracting salt since Roman times. Another useful and growing area of work for Costain has been the nuclear reprocessing work at the Sellafield facility in Cumbria. This project has been progressing for a couple of years now and will be constructed within 14 modules up to 30 metres in height.

Are they still for sale? Probably, but with an ambitious young MD, a parent who has little in the way of synergies with its Manchester subsidiary a deal should eventually come along. How do you value 3-400 staff these days – probably less than you did 9 months ago – but of course the old adage has always been – never buy a company for just it's people.

To discuss Jacob's progress in the UK and Europe you only need look at the financial numbers for Jacobs on a worldwide basis as you will see the same pattern. So we can close out the Manchester story with a visit to Pasadena, California

Like most of the other companies Jacob's 2007 financials were pretty good in every area of their overall business: Backlog increased $3.8 billion, or 38.9%, from September 30, 2006 to $13.6 billion Fiscal 2007 net earnings increased 45.8% from fiscal 2006 to $287.1 million Fiscal 2007 diluted EPS increased 43.3% to $2.35 per share
Jacobs also announced backlog totalling $13.6 billion at September 30, 2007, including a technical professional services component of $6.2 billion. This compares to total backlog and technical professional services backlog of $9.8 billion and $5.2 billion, respectively, at September 30, 2006. The Company finally booked the additional $1.9 billion relating to the previously-announced refinery expansion project for Motiva Enterprises.

Commenting on the results for the year, Jacobs President and CEO Craig L. Martin stated, "The fourth quarter was another good one for us, capping what was an excellent year. Our team did an outstanding job delivering on the promise of a strong market. We enter Fiscal Year 2008 with record backlog and a robust prospect list. The outlook for next year is good." Commenting on the Company's earnings outlook for fiscal 2008, Jacobs Chief Financial Officer John W. Prosser, Jr. stated, "The outlook for 2008 should continue to track above our target 15% average growth. Our initial guidance for 2008 earnings per share is a range of $2.70 to $3.10."

Jacobs continue to go from strength to strength in Europe – their strategy of focusing on major clients from regional offices with a few hub offices and, although the focus is mainly on Hydrocarbons in the larger offices and those small offices located in refineries or chemical plants and in addition we are seeing a tremendous growth in non hydrocarbon work. In the UK alone Jacobs have literally over 50 offices serving every industry and in addition to the growth in offices they continue to make acquisitions.

In 2008 they have made two significant acquisitions in the UK – in August it acquired L.E.S. Engineering Limited (LES), a 700-person national maintenance, construction and service works contractor headquartered in Grimsby, U.K., specializing in mechanical, instrumentation, and electrical installations for the process and utility İndustries. Grimsby is in the Humberside region of England and then only a week ago Jacobs announced that it has agreed to acquire a one-third share in AWE Management Limited (AWEML) from British Nuclear Fuels plc (BNFL). AWEML, a company founded in 2000, is a joint venture between BNFL, Lockheed Martin and Serco to manage the Atomic Weapons Establishment on behalf of the U.K. Ministry of Defence. Jacobs has been serving as a strategic supplier to AWE. Given the future Nuclear build programme planned for the UK over the next 25 years this seems a very shrewd move.

Jacobs tackle such a multifarious number of different types of business lines in the UK and Europe its often difficult to keep up with their various projects, but if you take in the new Forth Bridge, nuclear, life sciences, petroleum refining, chemicals, gas storage, motorways, railway companies, bridges, hospitals, education, the highway's agency, local councils, media companies …. The list is endless! Consultancy services for almost anything coupled with Contract T's& C's that never change. Jacobs probably have over 7,000 staff based in the UK, it may even be higher.

The current major centre though is the Manchester office, currently 700 staff approx, which can handle quite large hydrocarbon projects and is currently completing a major project for the Total Lindsey Oil refinery, which has not been a runaway success, and will be executing some of the units for the Ras Tanura petrochemical complex in Saudi Arabia. We understand that Jacobs is currently building a large office in Reading to accommodate all the smaller Jacob's offices that are located in this area. The consulting company continues to operate out of their prestigious offices in the Marble Arch office of London and is currently handling some very interesting and varied assignments.

Jacobs are trying to give the Reading office some critical mass by consolidating all of the offices in the Berkshire area into one office and this will include the former offices

of the Gibb and Babtie consulting companies - however they seem to be struggling to convert this critical mass into an office with solid hydrocarbon capabilities, in an area where all the peer hydrocarbon E&C companies are located.

There is also a consulting office based in Central London which is involved in one or two interesting assignments in the syngas, carbon capture and conventional areas of business.

The other major office is in the Glasgow area which has had a solid presence at the INEOS Grangemouth site for many years.

In Europe Jacobs signed a Letter of Intent with Kovoprojekta Brno A.S. (TKB), a top-tier engineering services firm based in Brno, Czech Republic, establishing formal cooperation to jointly execute projects in Central and Eastern Europe. The firms have worked together over the last 10 years on various projects, many involving sulphur technology. Through this new arrangement, Jacobs and TKB will provide a wider range of services for larger projects to their clients in the petrochemical, refining, manufacturing, buildings, and infrastructure sectors. TKB has over 200 employees engaged primarily in refining and chemicals, automotive manufacturing, and civil and infrastructure projects.

Wherever you go these days you bump into Jacob's people and I have to say they cut a fine show – proud of their company and its achievements – fantastic international expansion and the way in which it has move progressively up the food chain. Old Joe would be very proud to see the result of his labours that started in a shed in Alhambra in 1947 or as some of the more confident members of the UK operation have said 1946! History and Geography are everything in our industry – you have no where every plant is and the economic back ground of every Country and company. We have a great History in our industry and history and geography are my majors – so one of these days you may turn on BBC and suddenly hear 'Rod Dean from Ealing – answering questions on the history of the International E & C Industry'

Staying in Northern England there remains Day and Zimmerman where the DuPont Alliance is continues to bring work into the Billingham and Gloucester Offices. But generally there is only 'bits and pieces' type work in the rest of their workload.

K Home Engineering another Teesside Independent is not overly busy and there were some strong rumours a few months ago that it was about to be snapped up by a major player in our industry but someone who most of us never compete against but we understand the plug was pulled at the final minute and the deal was not completed. Another smaller embryonic new comer to the Tyneside area (and I understand there is a big difference between Teesside and Tyneside) is the Fabricom Offshore Engineering Services Company, an offshoot of the Fabricom Group of Companies. At the same time as newcomers join the industry we sometimes have to say farewell to others, and sadly West Engineering threw in the towel in late 2007 after many years of engineering service to the our clients in the North East.

Foster Wheeler UK had another brilliant year in 2007 – record revenues, record income and the first three quarters of 2008 have been similar - the years of the 'Robins Contract' seem a billion years ago now or even in a parallel universe. From suspension of stock back onto the OTC market and then climbing up the NASDAQ at tremendous rate – the word Phoenix is not an overused statement to describe the last few years. At the end of the third quarter of 2008, the number of work-hours in backlog amounted to 14.4 million, an all-time record – which in a time of a declining market is some achievement.

The best news for them of course was the announcement that Raymond J Milchovich, 59, chairman and chief executive officer, has signed a new three-year agreement, effective November 4, 2008, to continue to lead the company. Foster Wheeler also announced plans to move to Switzerland from Bermuda in early 2009 to get closer to its international operations in a country with a "stable and well-developed tax regime" and strong business environment.

A rigorous project oversight department was set up as early as 2002 to ensure that Projects meet /exceed client expectations and provide fair return and FW expects to be and I heard this verbatim from a senior FW person:-

Paid for risk. If risk is unquantifiable, then don't do it. If you don't know what you don't know, then you don't go there or may do very little as a learning process. (A bit of Rumsfeldian homespinnery in the last couple of sentences!)

FW see five key critical success factors
Company must have potential sources of competitive advantage
Find the people who "get it" – look inside company, promote from within
Focus on the basics and embed very high standards of excellence – don't overcomplicate or over sophisticate
"Hope is not an acceptable execution strategy"
Lead by example - corporate overhead was reduced from 276 to 72
Have the courage to take systematic action

Reduced debt by $842 mln since 2003 (now $191 mln) and transformed corporate capital structure. EBITDA had increased to $273 by 2005

FW has also been selected for inclusion in the new NASDAQ Global Select Market. From July 3, NASDAQ-listed companies were classified under three listing tiers -- the new NASDAQ Global Select Market; the NASDAQ Global Market, formerly known as the NASDAQ National Market; and the NASDAQ Capital Market, which remained unchanged. The NASDAQ Global Select Market has the highest initial listing standards of any exchange in the world based on financial and liquidity requirements, according to NASDAQ. Prior to the change, Foster Wheeler had been listed on the NASDAQ National Market.

FW claim at least 60-65% of their work is competitively bid, the balance is negotiated. About 18% is LSTK, 25% has some price risk, and the balance is reimbursable. Since 2002 they have decreased the fixed price component dramatically but this has not been an explicit strategy. FW is primarily concerned with getting paid for their risk.

FW has had successful recruitment, almost 2000 people hired in last 3 quarters. (Surely a large number departed as well!) Engineers want to work on something they enjoy and in an environment where they are appreciated and are supported. Recruiting has been heavy in India, Shanghai, Singapore and Thailand. Houston's hiring is strategic. FW has lost market share in the North American market but there is a strategic initiative to gain market share.

Reporting through their UK HQ there are a number of offices:-
Thailand is their biggest office, facing tough competition from Technip, Worley, Toyo and others – 600 people and busy, but limited by the available resources in the market. Shanghai combined E&C and Power engineering office is about 500, and was projected to increase in 2008. All their business is PMC, and they are struggling to break in to EPC
Malaysia – KL office is not big (100 or so) but enjoying lots of PMC work - engineering is largely moved to the Thai and Indian offices.
Singapore – about 200 but supporting the major Shell Petrochemical and Lucite projects
India (Chennai & Calcutta) – has been in E&C control (from Power) for 2 to 3 years and has grown to over 1000 in 2008 - this is an "export" engineering office only – they do not pursue business in India. However for an HVEC office this growth rate is exceptional but I understand that the quality has remained medium to high.

Awards have come thick and fast and one gets the impression that they take on the work whether they have the resources or not.

FW Italiana has had several awards in the Middle East, Eastern Europe and Greece – its traditional hunting ground;

The Madrid office has been winning work in Spain, including quite a lot of power related work.

Reading remains very strong in the Middle and Far East but is also winning work in the UK – it has a strong foothold in Refining and Petro Chemical areas. With the ever increasing demand to process heavy crudes their Delayed Coking process has had a very successful year with a number of strategic global awards. They are also moving slowly away from just a FEED / PMC contractor and taking on more EPCM and say they are also taking on some Lump Sum EPC work in the right circumstances (but I am not sure about that).

They are now a fully paid up member (almost) of the fabled LNG Club ( that mysterious group of contractors from Japan, the USA and France who for the past 30 years have been able to handle the majority of the available LNG Liquefaction work. With the increase in the number of LNG projects, coupled with the huge cost increases on materials, equipment, construction and schedule in the years up to 2007 there was a trend away from full LSTK EPC contracts which has opened up opportunities for both FW & CB&I.

FW having completed (with Worley Parsons) the EPCM project for the modular Woodside Train 5 at Karatha have also been involved on other Australian

opportunities at the Study / Pre FEED and FEED stages and made moves (with Chiyoda) to go head to head with the TSKJ consortium in a front-end engineering and design contest to build a seventh train with an option to build an eighth under what is called NLNG Seven Plus. Each train was to have a capacity of about 8 million tonnes per annum, making them as big as any yet under construction in the LNG sector. NLNG said previously it was targeting a final investment decision by the end of 2007 but here we are at the end of 2008 seemingly no nearer a final decision. At the same time it is now well into the EPCM Phase of the Woodside Pluto 1 Single Train development, another modular development, although considerably larger than Train 5 in terms of modularisation.

So should some of us, who are classed as speculators, invest in FW or is it too late? Well given the recent falls in E&C stocks and Foster Wheeler's strong position in what we all perceive to be a very difficult market there may be some more mileage in the stock yet. On the London market the few quoted companies were trading at up to thirty times earnings – pretty heady stuff most of us would say. KBR floated 20% of their equity as part of the planned separation from Halliburton (the rest was spun off in March 2007) and are trading under their issue price. The gloss has gone off some of the major E & C's on the NYSE , who are now trading well off their historical highs achieved in middle of 2006. Foster Wheeler now has an order backlog that is nearly twice as large as their entire sales, and at least one analyst, James Thorne at MBT, believed they had enough business on the horizon to keep them busy for 15 years! But have we ever really believed what some of the analysts say?

So is too much optimism priced into Foster Wheeler or their compatriots to make them compelling today? My gut feeling is no, but I need to look into this some more. Everyone from the FT to Smart Money has been calling attention to these companies following their recent downturn, so perhaps it's too late for any good returns in the short term -- but over the coming decade, I can't find much backing for the argument that the demand for cleaner, more efficient power generation, refining capacity and gas developments is going to decline.

Davy Process Technology has had another good year under the benign management of Johnson Matthey. JM stated that this acquisition was a further significant step in growing their Process Catalyst and Technologies business. The combination of DPT's process technology and engineering design capabilities with JM expertise in catalysis will substantially strengthen their leading position as a catalyst and technology supplier to the world's chemical and energy industries. Since then DPT have continued to be very busy winning a number of front end packages across the broad spectrum of their product areas – many of them in China and other parts of the Far East.

Fluor Corporation has in global terms had two brilliant years - financial results for its third quarter ended September 30, 2008. Revenue rose by 38 % to $5.7 bn, compared with $4.1 bn in Q3 of 2007. Net earnings for the third quarter were $183 million, an increase of 95% over $94 million a year ago. Earnings per share doubled to $1.01 per diluted share, compared with $0.51 per diluted share for the same period last year. Operating profit for the quarter increased 71% to $324 million, compared with $190 million a year ago, reflecting solid profit contributions from all

business segments. Operating margins increased to 5.7 % compared with 4.6 % in Q3 of 2007. Yes, the ‘Rolls Royce’ of International E& C companies.

New project awards for the third quarter were a record $8.8 bn, including a $3.4 bn award for the BP Whiting Modernization Project in the U.S., a large gas processing project in Russia (since slowed to a halt I understand) and a $1.3 bn mining project in Latin America. Consolidated backlog at the end of Q3 rose to a new company record of $36.5 bn, which is a $3.5 bn sequential increase over last quarter and a 31% increase from the same period a year ago.

Corporate G&A expense for the quarter was $45 million, level with $45 million reported in the third quarter of 2007. Cash and marketable securities at quarter end were $2.2 billion, up from $1.6 billion a year ago.

"Fluor's focus on major, long-term capital projects with well-funded clients continues to generate significant growth and opportunity for the company," said Chairman and Chief Executive Officer Alan Boeckmann. "Although the current economic environment has created uncertainty on a number of fronts, we are optimistic that our substantial backlog and industrial and geographic diversification will allow Fluor to continue to grow in 2009."

Based on strong performance to date and record third quarter new award levels, the company has narrowed its 2008 earnings guidance the company acknowledges the possibility that a prolonged economic downturn could moderate the demand for large capital expansion programs globally. While the potential exists for near-term decline in demand in certain of our markets, based on our current prospect list and the substantial earnings power of the existing $36.5 billion backlog, they are establishing initial 2009 earnings guidance in the range of $3.90 to $4.20 per share.

For Fluor in the UK the story is not quite as glittering (although + £400 million revenues continues to be very healthy) However let me just digress a moment - that ‘old chestnut’ (for Fluor anyway) of Lump Sum contracts reared its head again. Now I have nothing but admiration for Fluor in their sixty five years or so since Bob started out in Southern California – they are, I suppose the ‘Blue Blood’ of general contacting. They have been involved in some mighty projects in that time – from the Andes to the Middle East and many points in between you will have bumped into Fluor. Given the situation with ‘King Coal’ again I remember the huge Sasol Coal to Liquids plants in South Africa in the 60’s through the 80’s – mammoth projects that are very similar to the GTL plants under construction in Qatar today. Still back to my original point ‘the Fluor Achilles Heel’ LS contracting whether it be LS Services or LSTK– over the years they have had a number of problems in this area and in 2006 the curse struck again. They have had one or two ‘ups and downs’ in that time. OK it was infrastructure last time – not Hydrocarbons or Power but it is a recurring theme in the company’s history. 2005 had been a record year for earnings with revenues up by 40%. Although Power had suffered a major loss on one project during the year overall margins stayed above the benchmark 3%. In the last big boom, in the late 1970s, Fluor's revenue and earnings growth "exploded," as an index of commodities prices paid by producers of goods climbed 8% annually from 1975 through 1982, Fluor's revenue soared 25% a year. By the end of Q1 2006 the stock was nudging $90.

All was still going well on a global basis but there was a slight hiccup when the British government rejected a $749.5 mln bid for British Nuclear Group Ltd. (BNG) from Fluor. The government told state-owned British Nuclear Fuels Ltd. (BNFL), the holding company that controls BNG, and the Nuclear Decommissioning Authority to formally approve a new sale process for BNG. It said officials from the Treasury and the Department of Trade and Industry had decided that BNFL would not be allowed to sell the entire subsidiary to Fluor. The British government may have preferred to break up BNG as it could see this as a way to encourage competition in the British decommissioning industry, currently dominated by BNG. Fluor said then its offer recognized that BNG as a whole is worth far more than its individual parts.

Then in October Fluor said its third quarter results, scheduled to be released on November 6, would include approximately $168 million in pre-tax charges for cost overruns on several fixed-price projects. Considering these charges, the company lowered its preliminary earnings outlook for 2006, sending the stock down 8.99%. The company also guided 2007 below Street expectations. Cost overruns in the company's Government segment include provisions of $133 million relating to certain United States embassy projects and $13 million on a construction project for the United States Air Force in Afghanistan. The company's Industrial and Infrastructure segment included a provision of $22 million relating to a highway project in California. This hiccup reduced margins in Q3 to 1% and in the YTD to 3.8%.

In spite of this setback both European Offices remained full of work and progressing on all fronts. Work sharing has been successfully integrated across all offices and Fluor staff are putting together integrated teams on a global basis for many projects. From the Camberley office there were projects in execution for Kazakhstan, Kuwait, Sakhalin most of which were in the construction phase. Project awards in Saudi Arabia (the huge Kayam Project was a sign of the bullish conditions in the Middle Eastern market place.)

Engineering on the Kayam UDO facilities began in July 2006 and continued through 2008. Construction began in February 2007 with a targeted completion of December 2009. Peak engineering employment is anticipated at 1,000 employees with peak construction employment of 12,000. Fluor offices in Camberley, U.K.; Houston, Texas; Manila, Philippines; and Saudi Arabia were involved in the project, Coupled with the Habshan project in Abu Dhabi these projects gave the Camberley office a solid backlog.

I have to say I am surprised that both Fluor and FW take on these large O & U projects in the Middle East – base load work I suppose (+ 1 million hours) and are linked to the FEED / PMC projects. So however there can be no doubt that Fluor has recovered their old 'pre eminence' in the Middle East and will remain as one of the major global E & C companies – there are some major refinery expansions in the USA (virtual new grass roots refineries) and with Whiting already awarded and a possibly another slated for Fluor the only doubt is will the projects ultimately proceed into the EPCM phase.

However when you examine the Fluor UK accounts for 2006 and 2007 as I have there is one item in each year that hits you in the face – that is the profits are much

much lower than you would have expected. In fact net losses after tax in both years Now we all know you need to be careful when we look at US Subsidiary Accounts because it is not always clear of the accounting treatment of certain items, however it seems to me that Fluor UK has suffered substantial losses on a major project over a two year period and stated so in the 2006 accounts and in this case the project was probably the Habshan Gas project in Abu Dhabi. This project was, I believe, a Lump Sum Services project and although probably over the worst in 2007 the pre tax profits of £2.8 million were very low for a company with £400 million of revenues.

In late November 2008 Fluor announced that it signed a contract to relocate its current UK headquarters and operations centre to SEGRO's IQ Farnborough development in Hampshire. The real estate contract with SEGRO is to build a new company headquarters with a state-of-the art, four-building complex comprising approximately 210,000 square feet. The new headquarters will consist of one building of approximately 76,000 square feet owned by Fluor and an additional 134,000 square feet of leases in three other adjoining buildings. All four buildings will be new construction. Fluor's current UK office is located in Camberley, Surrey, which is less than five miles from the new office site.

"It is a tribute to the quality of the UK workforce and business environment that Fluor is today announcing these major investment plans," said Lord Mandelson, the UK Government's Secretary of State for Business. "A diverse and sustainable economy needs high-quality project management and engineering jobs and I am gladdened that a well-regarded global business such as Fluor is placing the UK at the heart of its operations to service Europe and the Middle East. The UK Government is pleased to support Fluor and welcomes today's news."

"The transaction, which is the largest commercial property contract in the South East in the last seven years, demonstrates Fluor's commitment to doing business in the UK," said Ian Thomas, Managing Director of Fluor LTD. "Fluor's UK operations have nearly 1,800 employees working for clients around the globe in diverse business sectors including: energy and chemicals; power; renewable energy; manufacturing and life sciences; nuclear; transportation and telecommunications to name a few."

Construction of the buildings is scheduled to commence in January 2009, with completion expected by mid-2010. An official groundbreaking date will be announced at a later time. Fluor has been headquartered in Camberley since the mid-1980s and has maintained a permanent operation centre in the UK for more than 50 years.

It is a tribute to Fluor’s political connections that they can obtain such a quote from Lord Mandelson who is without doubt the second most powerful person in the current Government. However will the complex be ultimately completed to the schedule or will the current downturn be a reason to have a rethink? We shall wait and see – they won’t be the only company in our industry that is currently grappling with this situation.

In Europe Fluor has announced that it recently acquired two private engineering companies. The acquisitions include UNEC Engineering N.V. of Antwerp, Belgium, and Europea de Ingenieria y Asesoramiento (E.I.A.) of Tarragona, Spain. Both companies will become part of the European operations of Fluor's Global Services

business group. Financial details for these transactions were not disclosed. The E.I.A. and UNEC purchases are part of Fluor's continued focus to provide local engineering, procurement, construction and maintenance (EPCM) solutions close to industrial centers where current and potential clients maintain significant commercial assets. (This sounds like a statement out of the Joe Jacobs strategic handbook – nothing wrong with that of course). Joe would have been proud to have read this statement.

UNEC has approximately 150 employees and focuses on small capital projects and plant engineering work. The company's current client base includes many well-known energy, chemical and industrial companies with operations near Antwerp's port region. Nearby in The Netherlands, Fluor has offices in Bergen op Zoom and Rotterdam providing the same EPCM services in those industrially dense areas.

E.I.A. and its management team have strong relationships with a number of important clients in Tarragona. The 100-person company specializes in plant modifications, engineering and small capital projects. E.I.A. is located in a strategic industrial region between Barcelona and Castellon and will be a great complement to Fluor's established Spanish offices in Madrid and Asturias.

At the same time that these acquisitions were taking place Fluor has also been opening an office in Anchorage and expanding its Argentinean operations ( I am assuming the old arrangements they with Sade are now dead and buried with the sale to Skanska nearly 10 years ago ?) and also its Singapore & Pittsburgh offices.

I suppose for Petrofac the big news in 2008 was the project that was ultimately not awarded.  It came about in this announcement ‘Petrofac together with Indonesia's IKPT were the lowest bidder for the contract to build the Gassi Touil liquefied natural gas (LNG) plant in the industrial area in Arzew, Algeria.’ ‘But state energy group Sonatrach has now started discussions with a rival bidder as it was not satisfied with the consortium.’ "Petrofac notes that Sonatrach yesterday announced that it considered that conditions set at the time of the public opening had not been satisfied by the Petrofac/IKPT consortium and that, as a consequence, discussions had been commenced with the consortium ranked second," said Petrofac. "Petrofac believes it submitted a fully compliant bid and was the lowest bidder on the prescribed cost per tonne basis," it added.  Our industry can be a strange old business sometimes so most of us take this sort of thing in our stride. The project ultimately went to the Snam – Chiyoda JV, evidently  Snamprojetti-Chyoda provided guarantees demonstrating his capacity of producing 4.6 tons per year of LNG, with an amount not exceeding 61 thousand AD a ton per day. Apart from this set back (and maybe its not really a setback) Petrofac has had another strong year with 2008 revenues in the region of $3bn with 58% in E&C, 37% in Operations and the balance in Energy Developments with estimated profits around $310.million.

The real question mark, however, hangs over 2009 – and the company's fate is tied in with a recovery of the oil price. Through its three divisions, the group executes EPC contracts for (mainly) the upstream oil and gas market, as well as operating or managing facilities. It also offers extensive training facilities for oil sector personnel, which means it is exposed to relatively resilient operational spending by oil groups and not just big capital expenditure projects.

Although management said there was a degree of uncertainty regarding new order flows, it has confirmed that its engineering and construction unit was bidding for orders of $10bn. Its engineering division order backlog stood at $2.4bn, which is flat year-on-year and roughly equivalent to 12 months' revenue. Its operations services unit saw its backlog fall 16pc to $1.6bn but this change was entirely caused by dollar strength. Is energy unit uses the company's design, construction and operational skills to invest in projects with partners.

Its joint venture with Northern Offshore at Don near the Shetland Islands, for example, is on track for first production in the first half of 2009, although the company has decided that it will not proceed with an investment in the Ebla development in Syria given the uncertain outlook.

The shares, on a December 2008 earnings multiple of 6.8 times are trading at a premium to peer John Wood Group, which trades on a multiple of 5.8 times. On the plus side, the company is relatively debt free; with a gearing ratio of just 22% Petrofac expects its gross cash balances at the end of the year to be around $600m. The stock also has a healthy dividend yield of 4.1% which should be safe because it is more than three times covered by earnings. After joining the FTSE100 Shares in June 2008 their stock has fallen back considerably and there was some danger of them dropping out in the past month but after a mini recovery their position seems safe for the time being.  So summing up, Petrofac have a very effective execution model with a main execution centre in Sharjah coupled with a major HVEC in India. However many of the projects are relatively close to home and mainly of an upstream nature in the E&C Division, but it has to be said the margins across the group have been very solid. A company to JV with rather than bid against.

Only founded in 1987 as a pipe fabrication company with a strong local reputation in the Baton Rouge area the Shaw group has made some ‘mighty’ strides in the succeeding 20 years and is now established as a major international E&C grouping.

A significant move has been the acquisition of an Equity Position in Westinghouse. In October 2006, Shaw acquired 20% of Westinghouse Electric, the world’s premier provider of power generating technology, equipment, licensing expertise, fuel and services for nuclear plants. The AP1000: Next-Generation Nuclear Technology is probably the foremost Generation III advanced reactor available on the market which has been selected by China’s State Nuclear Power Technology Company (SNPTC) as the basis for four nuclear power plants. The AP1000 Consortium is working closely with SNPTC to negotiate final contract details with implementation of the new build program.  As part of the AP1000 Consortium, Shaw will provide engineering, procurement, commissioning, and management services for the four Chinese nuclear generation units.  It is clear to most of us that nuclear power could ultimately be the salvation of the world and there is the potential for large numbers of nuclear power plants to be constructed over the next 50 years (maybe longer) and with one (very strong) French grouping, two Japanese contenders and the US offering from Westinghouse. There are also offerings from Canada and another US technology from GE. This global programme will get underway in the next few years – probably not in time to save us from the immediate downturn but it will provide a steady workload for our industry for many years.

The Stone & Webster name has been finally dropped from the Shaw E&C Divisional name - so disappears another famous name from E&C history. However Shaw is building up a head of steam of our industry with a strong technology heritage from both Badger and S&W, majoring in Ethylene, FCC and downstream Petrochemical Technologies and with awards in the Ethylene and FCC areas taking the lead.

With major Growth in the Pipe Fabrication and Maintenance segments, especially in the former, with large new module construction facilities in development with Westinghouse in Lake Charles for a mid 2009 start up. These facilities will further enhance their capability in the power sector which is their biggest potential growth area.
Adding this capability to the Environmental & Infrastructure areas you have a solid group basis across a number of industry areas and from studies through to commissioning and with annual revenues in the region of $5 bn they are now in the big league.

In the UK Shaw has E&C capability in the Milton Keynes office and Pipe Fabrication and M&E erection out of Derby and is expected to take a major role in the upcoming power developments (both conventional & nuclear) and have an entrée into carbon capture with their agreement with a grouping of companies for future work with RWE.

For Technip and Saipem / Snamprogetti this has been another ‘very’ interesting year. They are groupings with similar capabilities – tied in with major energy companies (either officially or unofficially) strong in both onshore and offshore. Onshore projects are generally Lump Sum, risky and take place mainly in the Middle East, Africa and parts of the Far East – so with a bit of luck you might expect margins of 3 / 4 % - unless you have some real differentiation and then 6-8% might be expected. Offshore is very different where the word SURF (basically Subsea) can mean margins of 15% and more. Now this is where both Technip and Saipem are the global leaders. For many years both Snam and Saipem were (sort of) independent companies owned by the state energy company ENI. This can mean many things, but as with Technip, Snam and Saipem have always been flagship contractors for their national energy industries. So it came to pass in April 2006 the inevitable happened and Saipem agreed with Eni the purchase of 100% of the equity of Snamprogetti for €680m in cash.

There is never a negative statement when mergers take place – not a downside in sight! I won’t bore you with the rest but it goes on a bit. But as you know if they did use the following you would be very disappointed –
dare I mention synergy?
a position of primacy?
a superior balance between capital intensive (offshore) and less capital intensive (onshore) activities?
The range and nature of the clients' profile of the new Group is broader and deeper?
will be uniquely facilitated by the strong industrial relationships developed on many common endeavours, by a natural affinity and culture deriving from common roots?
The capabilities of the two companies are both highly complementary and strongly synergistic: the amplification of the technological content and engineering & project

management competence will facilitate new business, while the group-wide exploitation of the ability to operate in the toughest environments will increase efficiency?

I report this because basically it never changes when a justification for a major merger or acquisition is made. I have heard these phrases mentioned, either partially or completely in every merger since the year dot – it's really back to the simple 1=1+ 2 (or 3) (or1). Stirring words all the same.

However since then the orders have continued to flow (both on and offshore) – this Italian Titan is now definitely one of the 'Galacticos' of the contracting industry. With new orders in the last quarter continuing to show further growth (at least into Q3 2008) with two major onshore orders, the Arzew LNG project and the Manifa Gas project for Saudi Arabia and some pipeline work in the UKCS coupled with some drilling projects. Margins are inline with my forecast above with Onshore in the 5-7% range and Offshore around 15-17%. All in all another very good year for Saipem

For Technip it was another successful year with the split of business and margins very similar to the enlarged Saipem. Offshore and Onshore are a very similar size at about E3 bn Revenues a year but again margins are very different - with offshore a mixture of Surf and Conventional at 18% and Onshore no longer stated as a separate item labouring at 3-4% - although it must be said that Offshore Facilities only contributes a miserly 4-5% of revenues these days . So plenty of new orders and lots of ongoing work – but the meagre margins may disguise all sorts of difficulties – which continue to relate to the completion of the four Ras Laffan and Qatargas LNG projects in Qatar won in the period 2004-2006 caused by labour shortages and unpredictable cost escalation – the majority of this appears to be taken in account in the 2007 accounts. However some work still has to be done to complete these projects so we may not have seen the last of this.

There was great excitement for a few days in December 2007 when rumours (or were they just rumours?) of a Saipem bid for Technip. The latter's stock price rocketed but fell back as quickly after denials by the Technip management. It was very hard to imagine this deal going through when you examine the structure of the French Energy industry – with Total, SuezGdF, EDF, Vinci, Bouyges and Technip having a dominant position in the domestic area and the flagship for French exports – as a major piece of the jigsaw Technip would not have nestled happily in the Saipem camp! Rumours have continued in 2008 but nothing concrete has emerged during 2008.

The Wood Group had a very solid year in 2007 most of their areas of operation, a solid recovery with full-year earnings before interest, taxes, depreciation and amortization, or EBITDA, rising 48% to $318 million from $210 million in 2006. In a statement in December Sir Ian Wood stated that it had been a very good year in 2008 as well (the first six months of the year were certainly ahead of 2007. The company attributed the rise largely to the strong performance of its engineering activities and its well-support business. It continues to develop its presence in a number of territories around the world.

They remain strong in the North Sea, with 20% of there business, but also have a strong presence in the Gulf and North America, and are extending operations in Columbia, Venezuela, the Middle East, Africa and Asia-Pacific. Business was up across the three main areas of engineering and production, well support and gas turbine services.

A good story and one that has sadly seen the stock fall consistently over the year from nearly £4 falling to under £1.60 at one stage. The Mustang purchase, which I thought pricey some years ago is now looking good business – it's all about timing as usual.

In Germany the big three march on

Linde, in spite of their difficulties with the first Snohvit LNG Train continued its profitable growth in the 2007 financial year. There was further significant growth in sales and earnings, following on from a very successful year in 2006. Sales increased in 2007 by 40.4 percent to 2.750 billion euro (2006: 1.958 billion euro), while operating profit rose by 39.5 percent to 240 million euro (2006: 172 million euro).

The order intake of 2.931 billion euro approached the record level achieved in the 2006 financial year of 3.123 billion euro. The order backlog at 31 December 2007 stood at 4.391 billion euro, almost as high as the prior year figure of 4.514 billion euro. These excellent figures are the result of a high level of demand for Linde technologies in all four main product areas: olefin plants, natural gas plants, air separation plants, hydrogen and synthesis gas plants.

Against this positive background, and given the high order backlog and the expected processing of orders, Linde anticipates sales growth in the next few years of 8 to 10 % PA.They have continued to make strong progress in the Ethylene business and secured several substantial orders in the year.

In the first 9 months of the year the Engineering Division, achieved a 12.4% percent increase in sales to 2.063 billion euro (2007: 1.835 billion euro). Operating profit also saw double-digit growth - of 14.4% to 183 million euro (2007: 160 million euro). This is equivalent to an operating margin of 8.9% (2007: 8.7%). They have again easily exceeded their 8% target; a target which they say is well above the industry average. Incoming orders in the Engineering Division of 2.295 billion euro were again higher than the figure for the comparable prior year period - of 2.248 billion euro. The order backlog at 30 September 2008 was 4.632 billion euro (31 December 2007: 4.391 billion euro). The positive business performance in this division was boosted by the continuing high level of demand in the four main product segments: olefin plants, natural gas plants, air separation plants, and hydrogen and synthesis gas plants. They expect an order intake of around 3 billion euro in the 2008 financial year 2008.

In fact only two days ago the Linde Group and its consortium partner Samsung Engineering, Korea announced that they have been awarded the contract to build an LSTK ethylene plant in Dahej, India. The plant has been awarded by the Indian company OPAL, a subsidiary of the state-owned ONGC (Oil and Natural Gas Corporation Ltd). The contract is worth around 1.030 bn euro in total, of which Linde's

share is 350 million euro. Further evidence of how important the Korean contractors are becoming the Middle and Far East. The plant will be the largest of its kind in India and one of the largest ethylene plants in the world.

Lurgi are now part of the large projects division of Air Liquide. Its previous owners Gea merged Lurgi with its Zimmer division at the beginning of 2007, after original plans to keep the two businesses separate. This was a strategic decision partly because Lurgi did not have enough engineers. Qualified engineers are very difficult to come by in Germany. Joining the two companies has strengthened the workforce by 110 people and given the company a competitive advantage. Lurgi has quite a lot of things going for it and with its position in GTL with Petro and Statoil plus a legacy capability in all things coal. We are still not sure how well its mega Methanol plants are operating – but the combination would form a powerful unit.

Third party sales in Engineering and Construction were 504 million euros, up +141.7% due to the Lurgi acquisition. Lurgi sales more than doubled in the second quarter to 229 million euros relative to the first quarter of 95 million euros. Demand is strong and capacity fully utilized by both internal and third party projects. Total order-intake remained at a high 800 million euros. It was boosted by particularly strong ASU and hydrogen plant (SMR) orders in Europe, China and South Korea. As a result, total orders in hand increased to 5.5 billion euros. Lurgi's technology is now integrated into the Group's Large Industries offering. The Lurgi teams are now fully responsible for designing and building the recently signed SMR in Rotterdam. Furthermore, they are leading the Group's SMR standardization project So their we have it a German Company happily absorbed within a French Industrial Gases Group and with the outlook looking fair it would seem to be prospering as well.

That leaves us with Thyssen Uhde or Uhde has they are normally known, founded in the 1920's and with more than 2,000 plants to its credit, Uhde is one of the world's leading engineering companies in the design and construction of chemical, refining and other industrial plants. With over 4,900 employees they are still a powerful force. Without Financial Accounts we only have Annual Sales and Backlog numbers which are both in the region of 2.5 Million Euros which equates to 6 million workhours approx. Fertilisers (Ammonia) still make up over 30% of their turnover, Polymers and Organic Chemicals another 15% , with Gas, Refining and Coke technologies another 15%. Uhde has also received orders for aromatics plants with total capacity of over 2m tpy. The plants will produce benzene, toluene or xylene, predominantly from coal or coke. Four are to be built in China by 2010. In addition, single orders have been received for plants in Kazakhstan, South Korea and Qatar. Uhde said some of the orders were acquired through its strategic technology partner Axens. All the plants will use Uhde's "Morphylane" extractive distillation process.

Tecnimont (now formerly named Maire Tecnimont) has had a successful year and continues to prosper under its new ownership. They continue to major in PE and PP projects, LNG Terminals and Gas storage, Ammonia EPC project and refinery work. This year new projects have come from many different regions, including Venezuela, China, Russia, Vietnam, Iran & Poland and often in JV with Korean contractors such as GS and Daelim. ,

Their financial numbers show annual revenues for 2007, just shy of Euros 2 bn, with Operating Margins at 6% and Net Profit after Tax at Euros 73mln. We anticipate similar numbers in 2008.

After a successful IPO at the end of November 2007 Tecnimont was now finally establishes as a stand alone company in its own right with a market capitalisation of Euros 500 Mln.

In the early part of the year they purchased the final 50% of their Indian HVEC (TICB) for Euros 72 million which now has over 1600 Employees, increased by 70% in the last two years, and now make up 40% of the total Tecnimont workforce, which now totals over 4,000. TICB was founded in 1958 and Tecnimont acquired their first shareholding in 1996. We understand that this office is more than just a back office detail engineering house but tackles more complex tasks as well.

Keeping the focus on India we already knew that Tecnimont was looking at forming a joint venture company with EIL for the execution of engineering, procurement and construction jobs in the UAE. It will hold 70% stake in the proposed joint venture firm while EIL India will hold 30%. The joint venture company will be registered in Madeira, Portugal, by acquiring a shell company, Lihatonbur-Consultores e Servicos, Lda, in Madeira. Madeira has been identified as the location for registering the joint venture company from tax, legal and operational point of view. This deal was closed in June 2008

The joint venture will target mega projects of over 500 million dollars. The scope of EIL would be engineering, project management and part-procurement; whereas, Tecnimont would be responsible for construction, management and part-procurement. Tecnimont would offload 10% of its equity to a local partner on case-to-case basis.

Spain is seemingly unchanged with the same old traditional faces but that ‘Paragon of the Spanish establishment’ Technicas Reunidas (TR) launched an IPO a couple of years ago and since then the stock has done extremely well and early this year was capitalised at $3.5 bn. TR is the largest Spanish engineering and construction company in the oil and gas sector’’. The group's three divisions are oil & gas, infrastructure & industries and power, in some ways a little like Shaw, but minus the piping shops.

In October 2008 Heymo Ingeniería S.A., a Pöyry group company has signed a frame agreement with TR for the engineering of several EPC projects over the next three years. Pöyry's services include front-end, basic and detail engineering, and procurement services. The initial estimated value of the services is Euro 15 million. Heymo Ingeniería is owned 60% by Pöyry and 40% by TR

Looking at TR’s awards in the past 18 months we have seen a considerable growth of their projects in the Middle East with petrochemical awards for Saudi Aramco and Borouge and in the Mediterranean arena with major refining projects for Hellenic in Elefsina, Galp in Sines, Khabarovsk in Russia, MOL in Hungary and Repsol in Cartagena. Always a major Power player TR has won three conventional power

plants in Spain and France and is also working on a couple of Nuclear power plants in Spain and in Taiwan, both utilising GE Technology

A lot of people would like to buy us, but that is not what we're about," Chairman Jose Llado said in an interview with Bloomberg Television. In 2008 ``we're having a good year with a great order book that also has low risk which has been supplemented by a number of additional awards in the Middle East. We are going to continue in the Gulf region, more intensely in the Mediterranean area and we are waiting for Latin America to open more," Llado said. ``We are also starting a worthwhile adventure in Russia." In 2007 profits were just over Euros 110 Million and were forecast to reach Euros 150 Million in 2008. The high workload has continued to be supplemented by their itinerant army of Venezuelans and Filipinos'. I did say given the aggressive sales strategy the final results remain to be seen – so far so good.

The stock like many others in our industry peaked at Euros 52 in May but by the end of the year at slumped to Euros 18, which is probably par for the course in our industry. Margins have improved to 5.8% during 2008, with a backlog of Euros 5 bn and last years profit should be comfortably higher than 2007.

They work comfortably in JV with companies like JGC and Technip and given their long standing relationships with Latin America where there are always a few projects in the backlog they seem to be a company that can see out the recession in reasonable shape, although the Spanish economy has been in particularly poor shape of late.

Dragados – always big in civil engineering, infrastructure and offshore fabrication have a continued appetite for the Hydrocarbon end of the E & C industry – taking risk and working with those less willing to take risk. - we are still waiting to see where this leads - I thought it might be 2006 and then 2007 but even last year there were a few awards in the Middle east but nothing to say that they were going to join the higher echelons of our industry. They do get involved in LNG Receiving Terminals, Hydrocarbon plants where there is a big construction component, standing in front of large EPC contracts which can be of assistance to some of the hydrocarbon specialist companies. In our industry their main area of input are major subsections of offshore and some onshore plants – big decks for offshore platforms and the 'notorious' Snohvit LNG Train in Cadiz – nice spot , shame about the outcome. As it sailed out of the harbour you could not tell that the percentage completion was probably in the mid 80's.

The Spanish Armada are completed by Foster Wheeler Iberia, an old hand in these parts since 1965 and Fluor, a growing force.

Foster Wheeler Iberia are strong in Power with two major awards this year and have won refining projects for Repsol and CEPSA in Spain in 2008.and some LNG Terminal work in Poland. They are still struggling to finish some refining work in Lithuania and will have some work in Latin America as well.

Fluor have been active in Spain for many years with work for GE Plastics in Cartagena but have recently uprated their efforts with an acquisition, referred to in the main Fluor statement . This year they have won the EPCM contract for the El

Musel; LNG Terminal in Northern Spain valued at $350 million and was also awarded the project management for a significant portion of Repsol YPF's refinery expansion in Cartagena, Spain. In addition, Fluor will be providing design and engineering services, management of procurement and construction for the refinery's utilities and offsites. Repsol's estimated total installed cost for the project is expected to be about $4.8 billion. Fluor's scope of work on the project is worth approximately $1.3 billion and was booked into backlog in the company's fourth quarter 2007.

The project scope includes the design and construction of new units and the refurbishment and expansion of existing units, as well as construction of the utilities and offsites. The expansion, when complete, will double the refinery's current production capacity – this is a significant project for Fluor in Spain (and the Poland office of course).

We must not forget Sener once an emerging player but these days? - little or nothing was heard in the past year or so with the exception of a JV with Masdar to develop concentrating solar power plants in the 'Sunbelt'. Sener has been working for almost a decade in the development of solar thermal power technology. The company is presently designing and building, in a joint venture, three 50 MW parabolic through plants with molten salt storage in Spain. They have also devised and tested innovative solutions for CSP tower plants and have started the detailed design of Central Receiver Plants. The company expects to apply all these solutions in the projects of Torresol Energy and also for other clients worldwide.
They still have an involvement in The Gate LNG Receiving Terminal near Rotterdam in Holland but have little hydrocarbon involvement these days and this could be their last appearance in my annual report.

So sweeping up around Europe we look for the waifs and strays and in some case the ‘walking wounded’ as we prepare to move onto the rest of the world where others may have more of a local view but I can still add a few comments to assist companies on their way.

Bateman Litwin have had a disastrous year culminating in an announcement on 19th December 2008 (more of which we will hear later), An 88 year heritage starting in South Africa in 1919 and the development of a company that initially focused on the minerals & metals industry and general contracting and then in the late 1980’s formed a JV with Brown & Root to execute the topsides for the Mossel Bay Gas Development Project (which is when I first bumped into them) and then went back to their ‘day job’ once again. Litwin, founded in 1955 in Kansas, have had ‘topsy turvey’ route through history which included spells attached to the fabled Badger organisation and having offices in France, Italy and Romania – never a premiership outfit but someone who could execute good quality work. Bateman acquired the Paris and Italian offices in 2004 and set up Bateman Engineering and Bateman Litwin. In 2005 the Romanian Office was acquired and in 2006 they had floated on the UK Aim Market. There have been three further acquisitions in the intervening years including a company based in the Emirates, Hutney Project from Slovakia (who worked for MWKL on the Slovnaft CCR unit in 1996 -1997) and Delta-T Corp, a US-based bioethanol technology company, for $45 mln in cash and $11.8 mln in new Bateman shares – valuing Delta-T Corp at $120 Mln.

Since then everything seems to have collapsed whether it be due diligence on acquisitions or execution. In 2006 they entered Nigeria in a JV arrangement and it appeared to be going well with an increase in revenue due to new contracts in France, Morocco and Algeria and progress in the Kashagan projects in Kazakhstan – all in the traditional Bateman areas of business- the share surged to £3.25 – today they are £0.195 – 7% of the value on that heady day at the end of June 2007 – within three months they had purchased Delta-T Corp and the 'die .was cast' when three months later they signed a $37 million contract to build a dry mill ethanol plant in Illinois. Or was it the $85 Million EPC project for a Phosphate plant in Morocco? Then one day in July this year it all fell apart – ''In a trading update, Bateman Litwin predicts $850 million revenue for the year and a record backlog of $1.3 billion at the end of June. However, the company has revised its operating profit to $15-20 million. It also expects the net profit to total $20 million, thanks to $15 million in finance income from hedging gains. The company attributes the drop to revision of certain projects as well as delays and ongoing negotiations to change orders on a large oil and gas project.''

On 20 November 2008, Bateman Engineering announced that the changed macro-economic environment had led to markedly more difficult trading conditions with a few contracts placed on hold or cancelled and some prospective orders unlikely to come to fruition for the foreseeable future. Additionally, the Group reported that the majority of currencies in which it operates had depreciated against the USD resulting in an adverse effect on the Group's results, whilst legacy contracts continued to prove problematic such that further costs to close these out would be necessary.

Little bit sketchy on the bad news I think – lots of positives but as a result the stock crashed by over 50%! Then there is 69% shareholding by BSG Resources – which has increased considerably this year and further purchases were made on 30th December 2008 – what is going on here ? Management has undertaken a detailed working capital review. The Board believes that, based on current banking arrangements, the Group has sufficient funding to satisfy its working capital and other committed funding requirements.

Keep your eyes on this stock – BSG are only a fraction away from having to make a bid for this company outright. But as the seasoned stock picker would say – not for those of a nervous disposition!

So as we move out of Europe and head to the East, as all the majority of the world's E&C contractors are so entwined in all sorts of working arrangements in what is now a truly global market my report must look at all the options.

We therefore finish up with Casale, Topsoe, CH2MHill, Washington Group, Ferrostal, Heurtey, Haskoning, KBC, Penspen, Siirtec Nigi, Tebodin, Techint, Tractebel, Whessoe and those technology companies Air Products, Axens, Stamicarbon & UOP.

Ammonia Casale were founded in Lugano Switzerland over 80 years ago and are organised in four divisions – Ammonia, Urea, Methanol and Chemicals. Their ammonia process, a high pressure, refined version of the Haber – Bosch process did excellent business in the early years and there were 200 plants commissioned and it

remained the dominant global process. From the early 60's the Kellogg large scale ammonia process took over, which they admit (without mentioning names!) in their history pamphlet. By this time they were moving into the Methanol and Urea areas but also saw their future in the revamp/ upgrade areas and pioneered the concept of plant revamps, which has become their staple activity, focusing on capacity increases and energy savings where they compete with the other majors. Their partnership with Lurgi remains a positive influence for mega plants.
In recent years their ability to work in Iran has paid large dividends with the second Razi Plant and has been very active licensing additional plants for NPC. They remain strong competitors around Europe on revamps and smaller upgrades.

We now move further north to Lyngby in Copenhagen's northern suburbs, the home of Topsoe, once again 100% owned by the venerable Haldor, now in his 96th year. Formed in the dark days of 1940, Topsoe has become an extensive player in Catalyst technology and a major force in Syngas developments and recently more business lines over the past 68 years.

Late in 2007 it was announced that Dr. Haldor Topsøe had acquired Saipem's 50 % share in Haldor Topsøe for a consideration of 340 million Euros in cash. Dr. Haldor Topsøe then held all the shares in Haldor Topsøe. Saipem (43 % owned by ENI) is the owner of Snamprogetti, which originally invested in Haldor Topsøe alongside Dr. Haldor Topsøe in 1972. "Haldor Topsøe and Saipem will continue their commercial relationship – notably in the areas of ammonia and fertilizer," said Dr. Topsøe continuing: "We have had a good and fruitful relationship with Snamprogetti for 35 years and while we are parting ways as shareholders in Haldor Topsøe, we look forward to continue our business relationship with both Snamprogetti and the broader Saipem and ENI groups." A few eyebrows were upturned after this announcement as to the motives of the seller – were they using the receipts to cover other positions – we shall never know?

During 2008 Topsoe have won licenses for three Ammonia plants in Algeria and Vietnam and in the last two years have continued to sell their Refining Hydroprocessing and Hydrocracking Licenses, mainly in Europe but a couple in Venezuela as well. They have also recently broken into next generation Biofuels technology during 2008.

Two US aspirants who are stirring things up in the UK are the Washington Group (now part of URS) and CH2MHill – the former (once owner of the fabled Raytheon E&C and the heir apparent to Morrison Knudsen, who once strutted their stuff in Boise, Idaho, until Bill Agee got it wrong. Dennis Washington has long gone, so has Peter Dance as well but here they are in NW UK cutting the mustard in the Nuclear reprocessing industry and looking to participate in the upcoming nuclear power new build in the UK. CH2MHill, coming out of Denver are helping London to plan, control the cost, and provide overall management for the 2012 Olympics (let hope it's not the 2013 Olympics as this will finish off our friends from Denver). Simultaneously they have a major role in managing the massive Masdar development in the UAE – now their involvement in London 2012 has totally destabilised the project controls staffing of many UK based E&C companies in the hydrocarbons sector – rather exotic hourly rates are tempting London's young and often relatively inexperienced project controls staff to the 'Eldorado in Docklands'. Many of us have observed the rise of this company and a journey through their web site can be a quite illuminating experience.

Well as a colleague of mine would say ‘They show pictures of worldscale projects from every sector from hydrocarbons, manufacturing, infrastructure but it’s very difficult to recognise the role that they actually undertook’ well it’s a bit like that with CH2MHill. Their last Press Release for 2008 was something to do with a fish passage project to provide green energy. So you dig deeper and find a tiny FEED for an obscure refinery in Montana and some potential utility work for the Fort Hills Upgrader project in Canada. We do expect them to be looking at the UK Nuclear build programme as well. There is a lot of water and consultancy work and the odd acquisition, but those photographs …… stunning.

Tractebel continue to be involved in LNG Receiving Terminals at various levels but apart from that they are not very visible anywhere else these days. The same can be said of Whessoe. Air Products soldier on in SW London with 300 odd staff executing Air Separation units in their normal effective way.

Petro-Chem Development Co., Inc. (Petro-Chem) announced that it had agreed to be acquired by Heurtey Petrochem S. A. (Heurtey). This combination of New York-based Petro-Chem and Paris-based Heurtey has created the world's largest provider of direct fired heaters to the global refinery and petrochemical industries. Specific terms of the transaction were not disclosed. Heurtey is a publicly traded company that is listed on the Alternext d' Euronext Paris Exchange, an affiliate of the NYSE, under the stock symbol ALHPC.

Penspen the UK ‘minnow’ based in probably the most attractive location in London , down by the River Thames in Richmond, not quite as few as ‘Three men in a boat’ but always sailing a delicate course not too far from the bank. They have been awarded the Owner’s Engineer role on the Nabucco pipeline and have a similar role on the Portland Gas Storage project after completing the FEED. Life goes on in Water Lane – not quite submerged yet but keeping a boat next to the office just in case.

Both Tebodin and Haskoning keep their operations chugging along with local Dutch work and some Middle Eastern projects (Tebodin) and work in the Far East (Haskoning) – good local companies to work with in Holland, where ‘Think local, act local’ still has a part to play.

For the rest on my list its business as usual – Axens and UOP continue to slug it out in the technology arena. Stamicarbon have been for sale for a year now and I guess they will end up in new ownership shortly. KBR have shown improved performance but their stock is trading in the doldrums – they may also be for sale at the right price.

Moving eastwards we reach India which is currently a powerhouse for our industry – at least 50% of the major contractors have HVEC centres dotted around the country, some having in excess of 1,000 staff and taking on increasing responsibility.

I have already touched on Punj Lloyd and EIL but there others getting involved as International Contractors as well.

Larsen & Toubro has probably demonstrated a wider range of capability than most and had further success than most supplying large amounts of equipment to a very hungry industry but also obtaining fairly high level involvement with Western

Technology Suppliers. Started by a couple of Danes in 1938 (Larsen only died in 2003) they got their real start when Denmark was invaded by Germany in 1940 and they were on their own. Co opting a few interned Germans to help with some of the technical stuff they made a start and the rest is (almost) history. With revenues in access of $7 bn they are up there with the big boys now.

With capability in all areas of our industry especially Upstream Offshore and Mid and Downstream where they have close relationships with Chiyoda.

Additionally they are on the acquisition trail with plans to acquire gas processing companies. They are looking at companies which have the technological skills for gas processing but have given no further details. L&T already offers facilities and equipment for gas processing that includes gas gathering, sweetening, compression and dehydration.

L&T has been focusing its strategy towards the Middle East, which has clearly paid off with some very large orders in the infrastructure, power and hydrocarbon sectors. It also provides its switchgear & IT services to the region. Demonstrating its long term commitment to the region, by building a strong local presence, L&T has taken the initiative of forming joint venture companies with local partners. It has already established several joint venture companies in the United Arab Emirates, Qatar, Kingdom of Saudi Arabia, Kuwait and the Sultanate of Oman. Today, L&T is involved in the construction of prestigious residential and commercial complexes in Dubai and other parts of the UAE.

L&T is taking up turnkey projects in several sectors such as hydrocarbon (upstream, midstream, downstream), power (generation, transmission, distribution) and cement plants, as well as civil and infrastructure projects. L&T has also entered into the ready mix concrete business in UAE. As a long term commitment to the region, L&T is establishing state-of-the art fabrication facilities for the manufacture of modular structures, heavy jackets and offshore oil & gas platforms at Sohar in Sultanate of Oman, and has recently also entered into a joint venture agreement to establish a green field plant in Sohar for the manufacture of high-tech equipment for the process industry. It has also set up an assembly factory for electrical switchgear and related electrical products in Dammam in the Kingdom of Saudi Arabia.

For engineering services, L&T has offices in the Gulf to offer stand alone design and engineering consultancy services in oil & gas, as well as civil works in UAE. In addition, L&T offers information technology related services, and has made a breakthrough in providing IT services to clients such as Aramco, Qatar Petroleum, etc. L&T's exports are approximately 20% of its total revenue, and the majority of this comes from Gulf / Middle East region. – this will surely increase when 2008 financials are reported.

L&T created history by receiving the world's single largest orders for reactors from the Kuwait National Petroleum Corporation against stiff global competition. It will manufacture and supply 22 Hydrocracker & Atmospheric Residue Desulphurisation Reactors for Kuwait National Petroleum Company's prestigious "Clean Fuel Project 2020" at an order value of USD 421 million.

So there we have L&T clearly up with the world's leading E&C companies with additionally fabrication and manufacturing facilities as well.

As we move further east and cross South East Asia we see numerous HVEC offices dotted across the region in the Philippines, Indonesia, Malaysia and Thailand with a number of full EPC offices as well , with Foster Wheeler, KBR, Technip, Jacobs, Worley Parsons, AMEC prominent. Most of the majors have HVECs as well with the trend moving from Philippines to Indonesia where there is perhaps more chance of a stable work force. Poaching has become a major problem over the past two years but with the downturn may stabilise in the short term.

Turning left at Hong Kong we arrive in Japan which has different challenges compared with almost any other region where our industry is active.

For Chiyoda the last 18 months have been very difficult. In 2006 Chiyoda was able to outperform industry leader JGC with an operating profit margin of 6.4%, significantly higher than JGC's 4.4%. This was achieved by focusing on a narrow area of business lines which could also be construed as putting all of your eggs into a very large single basket – Qatar LNG.

Well two years on we are seeing a totally different situation. Chiyoda, which earned a substantial portion of its profit from its LNG plant operations concentrated in Qatar compared with JGC which handles a wide range of engineering projects, including oil refineries as well as chemical and LNG plants. It has even taken on unprofitable projects as a way of acquiring new technologies and expanding its client base in such countries as Vietnam and Yemen, where it had no business experience. These projects are considered as investments to expand business in the future. JGC has also been attempting to boost its profitability across a wide range of operations, bracing for a time when plant engineering demand will decline significantly.

Back to Chiyoda and their continuing woes. In March they announced a collaboration plan with Mitsubishi Corporation, who financed the flotation of additional equity in the company and now own 33% of Chiyoda's shares. This was basically to shore up the company as a result of a continued requirement to finance their LNG projects being executed in JV with Technip due to problems resulting from the overheating market leading to large schedule slippage caused by a shortage of construction resource and mega increases in steel and equipment costs. This situation is in many ways a carbon copy of the Ras Laffan LNG disaster of the late 1990's which led to a Mitsubishi bail out and the KBR shareholding from 1998 through 2005 and the secondment of senior KBR executives to assist Chiyoda.

Having established a position of total dominance on both Qatargas and Ras Laffan since the late 1990's Chiyoda and their JV partners have been executing larger and larger trains and for some time the position seemed under control and then with the great boom everything got out of kilter.

The second 7.8 million ton a year LNG production train of the Qatargas 2 natural gas project is now not expected to start until Q3 of 2009 – a 9 month delay, Total said in a presentation in September. Labour and equipment shortages have already delayed the first 7.8 million ton a year LNG production train at the project. It was due to begin

shipping cargoes of LNG to Europe late in 2007, but commissioning of the plant only began last summer. Qatargas 3 will start up in 2010 rather than in November 2009 as previously scheduled, and Qatargas IV was also delayed but should start up in 2010 as initially planned.

A spokesman for Qatargas said that the offshore facilities for the project have been commissioned but the first production train has yet to produce any LNG. The first train is still on track to ship its first cargoes before the end of the year- not sure if this has happened?

As far as the financial ramifications are concerned they would have started to take some major financial hits in 2007 probably $600 million (just extrapolating from the Technip numbers in 60/40 JV situation) and there may be more to come? The stock performance this year has been very poor with a reduction from 2000 Yen to a current level of 480 Yen. As well as financial problems the LNG market has concentrated their resource requirements for the past two years that it has been very difficult to develop other projects and business areas of any magnitude.

On the brighter side they have handed over the Sakhalin 2 LNG Trains and have been awarded the EPC Competition for the PNG LNG project. So there may be life in the old dog yet.

For JGC the past two years have brought much happier times – having finally got shot of the Dolphin Gas project they have made good strides on all fronts and have remained very busy.

It has been a time of several major awards namely

Saudi Polymers Company, EPC services for the NCP Project, Jubail, Saudi Arabia. Ethylene, Metathesis, Pygas-Hydrotreater and 1-Hexene process units.

With GS Engineering & Construction Korea, for Kuwait National Petroleum Company (KNPC) to provide EPCC services for the NRP Project, Package 1 - in Al-Zour, Kuwait. JGC will install Atmospheric Residue Desulphurization Unit, Heavy Oil Cooling Unit, Saturated Gas Unit and Flair Stack.

Saudi Aramco EPC services contract for a large-size Utilities, Storage and Shipping Facilities for the Central Processing Facilities in Manifa, Saudi Arabia.

Sonatrach, Algeria's state-owned oil and gas company, the EPC services contract for gas & oil gathering units, separation, desalting and other facilities in Rhourde Nouss, Algeria.

With strong financials and stock price the only difficulties may arise with the ability to execute all of the work in hand but given some of the statements coming out from the Middle Eastern clients there will be a slow down in the execution schedules so that may ultimately sort itself out.. JGC stock is trading at around 1300 Yen, a midpoint between its high in May and low of 785 Yen in October.

JGC did acquire a modest shareholding in an Italian Engineering company APS in December.

For the smallest of the big three Toyo have had a relatively quiet year with three major awards the Topsides for an FPSO (Offshore Angola) for Modec, an Ethyl benzene project in Russia for Sibur and a major refinery project in Indonesia for Pertamina involving Lummus Olefins Conversion process. They are still relatively active in the fertilizer business and a completing the execution of a project in Venezuela. Profit levels have continued to improve over a five year period as have all other financial indicators.

We must this year devote a paragraph or two on the Korean E & C Contractors who it would seem have made the final breakthrough into the 'major league' of international E&C contractors. Given the volume of work available (especially in the Middle East) and their appetite and ability to take LSTK risk this should come as no surprise to any of us .,

Although it has not all been plain sailing for Korea as  Saudi Aramco and its joint venture partner Total banned South Korean contractors from bidding for a major EPC deal on the $12bn-plus Jubail export refinery, citing the high levels of technical expertise required for the project.

The decision may alienate the Korean contractors, such as Hyundai Engineering & Construction, SK Engineering & Construction, GS and Daelim Industrial Company, who won more than $5 bn worth of orders in the region in 2006-2007. International companies submitted prequalification proposals to Saudi Aramco in October 2007 for a range of construction packages at Jubail, including aromatics and conversion units, and distillate and hydrotreater facilities. Several South Korean firms indicated their interest and were invited to a separate job explanation meeting in Rome in early December. However, an Aramco project manager working on the Jubail refinery says all South Korean companies will be "excluded" from bidding. "We are looking for Europeans on it [Jubail] and maybe Americans," he says. "We do not want South Koreans because this contract is technical and very detailed and we want established companies to perform this work."

Two South Korean firms who attended the prequalification meeting say they are unaware they have been unofficially cut from the potential bid list. One Korean firm, which proposed a joint venture, says it would be surprised if a blanket ban was imposed. "We have some good ideas and are of course competitive on cost on this project, and are still in the frame as far as we are aware," says the firm's Jubail-based executive.

However, one senior executive from a US contractor that expects to bid for the project says the original indication from the client was that South Korean companies were unlikely to be wanted. "The original thinking was that they wanted big, established contractors who had done lots of work in the region before," he says. He suggests that Aramco and France's Total may yet be forced to include South Korean firms in their plans. Costs are thought to have doubled to more than $12bn for the

400,000-barrel-a-day refinery and Korean firms have a history of offering the lowest prices.

In 2007, South Korean Energy Minister Kim Young-Joo identified the Jubail refinery as a project in which he expected South Korean firms to participate. In a meeting with Saudi Arabian Oil Minister Ali al-Naimi, in March 2007, Young-Joo highlighted Jubail as one of 10 projects in the kingdom, worth about $16.4bn in total, in which South Korean companies were interested.

Well this has all changed now as we see all of the Korean contractors aligned with the US, Japanese and European contractors in various projects and proposals in the Middle East. With the recent boom they finally were able to take the opportunity and the concerns outlined in the above paragraphs have now been swept away – these companies are competent, competitive and working with JV partners are able to shoulder some of the risk. They of course like any of us have capacity constraints as well – but that may not be such a problem in the future. Another fierce group of competition has finally come of age.

Heading south to our final port of call in Australia, that's if there is anything left of it, with so much in the way of iron ore and other metals being shifted to China, Japan and Korea plus another +100 Million Tonnes of Coal each year to other places I have fully expected Freemantle to have tipped into the Pacific Ocean by now (with the Cockburn Cement plant (that my father was involved with in the 1950's) and the Kwinana Refinery which both Kellogg (EPCM) and John Brown (CJB then, as the construction contractor) – this would encapsulate the three companies that the two of us have worked for (to date). With 76 Billion Tonnes in reserves there is a lot of coal to shift!

The last remaining global E&C company for review is now headquartered in Australia but is probably more famous for its US arm which dates from 1944 out of Pasadena, California and still has a major office in the London suburb of Brentford but the centre of gravity has definitely moved to the east. Parsons was with Fluor, Bechtel and CF Braun one of the Californian Companies who became early leaders in the Middle Eastern boom that began in the 1960's and 1970's. Worley Engineering was a different 'kettle of fish' all together – founded by John Grill as Wholohan Grill in 1971it was still a small company when we entered the 1990's, although it had already started to acquire some of the Worley subsidiaries in Australia and SE Asia and expansion continued through the decade to 3,000 staff by 2000. In 2002 the company was floated on the Australian Stock Exchange. The acquisition of the hydrocarbon assets of the Parsons Company in 2004 was the big step forward and created a global company – the rest is now history, or is it? But with over 32,000 staff it is a very impressive achievement. Like any Australian Company they major in M&M, Offshore and get the downstream and PMC capability from Parsons.

The London Office has been very busy this year and has shown one of the highest growth rates of any London based E&C office. Heavily engaged in Kazakhstan on a number of projects, plus a couple of assignments on Sakhalin Island the office is well filed at the moment and they have been one of the few office hiring staff recently in London.

Offshore work has continued to flow into the backlog and coupled with the acquisition of Intec this should increase with time. Term and Maintenance projects have continued to flow their way plus a couple of major Canadian Oil Sands projects (these may not ultimately proceed) However an annual profit of AUS$ 344 MLN for the year to end June 2008 is over 50% improvement compared with 2007 – the future looks bright – ‘Over to you John !’

In its review of 2009 WorleyParsons said it expected solid growth in the 2009 financial year, with the second half set to be stronger than the first, helped by the weaker Australian dollar. Chairman Ron McNeilly warned that some projects it was involved in were being hit by market turbulence, but the group still had strong demand from customers. He said the group, had made a solid start to the year. "Currently, we expect the second half of this financial year to be better than the first half and to report good growth for the full 2009 financial year," McNeilly said in remarks prepared for the group's annual meeting. Analysts on average expect the company to report a 22 % rise in full-year net profit to A$421 million ($254 million) for the year to June 2009, according to Reuters Estimates.

Chief Executive John Grill said major existing oil and gas projects it was working on had not been affected by the economic crisis, although he added that some new oil sands projects and future phases of existing oil sands projects had been delayed. "WorleyParsons' most significant international and national oil customers have considerable cash reserves on hand, and several have publicly indicated that their current and expected future upstream budget will be largely unaffected by near-term credit or other concerns," he said.

Hydrocarbons projects are the biggest earner for WorleyParsons, with big clients like ExxonMobil. In mining projects, he said the company expected a significant number of deferrals and some cancellations, especially on projects that need external finance. But WorleyParsons would be able to weather that as it had long-term asset services contracts on existing operations and strong clients, he said.

"I look forward to personally heading WorleyParsons through what can only be described as interesting times over the next few years," Grill said.

**LNG – THE ELDORADO THAT NEVER ARRIVED!**

The industry had been limbering up for several years for the anticipated ‘golden era’ which seemed to be on its way, especially with the global boom at its height and then most of it has evaporated or pushed back over the next few years or even further ?

Although we witnessed 3 awards in 2007 the Peru LNG project allegedly achieved FID in 2006) Fourteen LNG projects were meant to achieve FID in 200, but only two did: Pluto 1 in Australia and Angola LNG. These two projects had one distinct advantage over the others: a strong alignment in the strategy of the project's partners.

PFC Energy, said, "In an increasingly competitive and interconnected gas world with no easy LNG projects, alignment of partner strategies will remain a key project driver." It may seem obvious, in retrospect that the projects which moved forward were the ones which include companies most in need of them, but few projections think that way. Often, projects are assessed on strictly objective merits such as IRR or netbacks; as the LNG industry showed in 2007, it is as important to look at who is in the project as it is to look where the project is located. In fact, it is even more important. A company with no alternative for growth other than one specific project is likelier to overcome obstacles in pushing forward -- this was the LNG lesson for 2007."

The two projects which reached FID in 2007, Pluto and Angola LNG, were fortunate in avoiding many of the challenges, such as cost increases, security, social and environmental concerns, feedstock uncertainty, arguments between host governments, and financing issues, although delays had occurred in the past (particularly Angola). More importantly, however, they differed from other projects in the sense of urgency among their partners. When Woodside took FID on Pluto, there were few growth alternatives for the company; Unlike the IOCs operating in NW Australia, Woodside Petroleum's reserve base is limited and geographically focused and it cannot rely on a portfolio of liquefaction projects to become a real player in the industry -- it needs to unlock these reserves.

Similarly, Angola LNG first moved forward when ExxonMobil, which is preoccupied with a massive build-up in Qatar, left the project in March 2007. The remaining companies, and Eni which joined them, had more focused portfolios in which Angola LNG was necessary, including the need to reduce gas flaring in the face of rising oil production in the country. Chief among them was Chevron, which has seen its projects in Australia, Nigeria and Venezuela plagued by high costs, partner drag, and security and political concerns. Eni faces similar problems in Nigeria, as well as supply issues in Egypt.  Angola LNG was essential for Eni's growing Atlantic Basin strategy. TOTAL is similarly challenged in Nigeria, while its LNG ambitions in Iran and Russia will have a long-lead time before coming through. Even BP, despite its diversified portfolio, faced supply issues in Trinidad and Egypt and needed a project to follow Tangguh and North West Shelf Train 5.

Each recent year has brought global LNG capacities to levels only dreamed of 10 years ago. That will be no less true for 2009 and 2010. The difference with these years, however, will be that many of the projects set in motion 3-5 years ago will be

coming on line or nearing completion as the wave of projects from the first half of this decade crests – however one has to be honest and say that many of these projects will be coming on stream much later than expected or perhaps operating at less than the planned capacity. Qatar is a good example of the former and sadly Snohvit probably covers the latter example but we do hear that the production levels have been rising recently. The NLNG 6th Train came in on schedule in January 2008.

But closely following that wave are clouds of problems that have begun to obscure the future, ultimate success of LNG in transforming natural gas trade into a fully global enterprise.

Most of the liquefaction capacity in the next 3 years will come online in 2009 - 2010, mostly in the Middle East as several projects in Qatar- at least 39 MTPA are ( as mentioned above) finally completed. Qatar Petroleum Co. announced in 2007 that it was freezing plans to finish current projects and to evaluate reservoir conditions in and production from its North field, the world's largest non associated gas field. The other problem for Qatar has been the huge activity in the GTL, Petrochemical and Refining areas – shortage of labour, shortage of equipment and materials plus the associated cranes and other equipment that are essential for the construction companies to complete their tasks. These other projects should also be completed in the next 2 to 3 years

As I have stated above Qatar's new-found position as the world's leading producer of LNG has been nothing short of remarkable. The gas-rich Gulf state has pumped more than $60bn into LNG projects and will spend another $35bn by 2012, when exports will spiral to 77 MTPA.

This boom has lifted the fortunes of E&C companies hired to design and construct these facilities. For these firms, which had struggled for years to deal with falling order books and slumping profits, the turnaround has been startling but of course there is always a potential downside.

Two companies in particular have won the bulk of the LNG work in Qatar. Technip and Chiyoda Corporation formed a joint venture to build the world's six largest LNG trains, signing almost $10bn worth of contracts with subsidiaries of Qatar Petroleum. The fact the deals were on a fixed-price basis seemed to matter little at the time. The energy market was stable and contractors, eager to find new markets, saw great opportunities. Now a massive jump in material and labour costs has made the climate far more difficult. Both Technip and Chiyoda say that huge cost overruns threaten the profitability of their Qatari gas projects- see above in Chiyoda report.

This is a problem for many other EPC companies, not just those in Qatar. Many have been exposed to a level of inflationary risk not experienced before. Neighbouring countries, aware of the limitations of the traditional fixed-price contracts, have been bringing in different models in response to the market conditions. Saudi Arabia and Kuwait have started signing contracts that share more of the risk of escalating prices between the clients and contractors.

This approach has not yet extended to Qatar, which remains wedded to the traditional contracts. But with only half of its planned LNG capacity delivered so far, it

could now be forced into more negotiations with its partners, and suffer further delays on the projects.

There was one piece of good news on the execution side of the industry. TSKJ Nigeria Limited, a construction consortium comprising KBR, JGC, Technip and Snamprogetti, completed the construction and commissioning phase of the Nigeria LNG Limited (NLNG) Train 6 project on Bonny Island increasing the company's total export capacity to 22 MTPA of LNG. The development also increases NLNG's total LPG and condensate output to 4 million tpy from 3.6 billion cubic feet per day. NLNG awarded TSKJ the LSTK contract for the LNG train in July 2004. Train 6 is the fourth project TSKJ has executed for NLNG, and it was completed in less than 41 months from contract award. The project recently achieved 10 million man hours without a lost time incident. After achieving RSFU in December the Train passed its 72 hour a commendable feat by any stretch of the imagination. performance test in February 2008. A commendable feat by any stretch of the imagination.

Long-awaited production has also started from Russia's Sakhalin and Woodside Train 5 in Australia.

By the same token, most of the new regasification capacity in 2008-09 will come on stream this year. In the US, more than 65 million tpy of import capacity is set to open-all but 3 million tpy on the Gulf Coast-with additional North American capacity set to open in Mexico and Canada pushing that continental capacity to nearly 90 million tpy. However that may be now on the high side as we are seeing some slippage and even cancellation with a few of these projects.

Europe will have added nearly 26 million tpy of import capacity, mostly in the UK (this is perhaps 6-9 months late but is finally expected in Q1 2009) but also in France and Italy, if current construction meets targets. The slippage in the UK probably dovetails nicely with the problems in Qatar.

Asia will similarly add 26 million tpy in 2008-spread amongst India, China, and Korea-with another nearly 19 million tpy due online in 2009.

Cabinda Gulf Oil Co. Ltd., a wholly owned subsidiary of Chevron, holds a 36.4% interest in Angola LNG Ltd., which has entered into an investment contract with the Angolan government and the country's state oil company Sonangol to develop the project. Other Angola LNG shareholders are Sonangol (36.4%) and BP PLC and Total (13.6% each). This award was finally confirmed to Bechtel. The project plans to move offshore Angolan gas to a liquefaction plant to be built in the Soyo region, Zaire Province. The plant will be able to handle 1 bifid of associated gas and produce 5.2 million tpy of LNG and related gas liquids. The project will also supply up to 125 MMcfd of gas to Sonangol for domestic use in Angola.

First LNG from the project is set for early 2012 and will be delivered to Gulf LNG s Clean Energy regasification terminal, planned for Mississippi's Gulf Coast.

Also receiving the green light last year, after considerable delays and doubts, and starting construction was Woodside's Pluto LNG project, involving an investment of more than $5 billion (Aus). The project includes development of Pluto gas field, off

northwest Western Australia, and construction of an onshore LNG plant in the Pilbara region of Western Australia. Pluto field, discovered in 2007 with early reserves estimated at 3.5 tcf, lies about 100 km off North West Western Australia and about 180 km from the Burrup Peninsula. The gas, according to Woodside, is relatively dry with small amounts of condensate and low levels of carbon dioxide.

Pluto's first target for its 5-7 million tpy of LNG is Asia with possible eventual supplies aimed at North America, especially if any locale on the US West Coast ever approves a terminal. The first phase will build a 4.8 million tpy train with first gas expected in 2011. Woodside Energy said feasibility work has been completed on the second train.

These two projects made headlines in 2007 year in part because of longstanding industry concerns about the slow pace of growth in global liquefaction capacity there is a growing gap between liquefaction and regasification capacity. By far the largest factor in the slow growth of production capacity has been the explosive increase in materials costs and the shortage of skilled and trained labour to build and manage projects.  I keep harping on about this every few pages as you have noticed but these are the major factors inhibiting much of the new growth

A good example of the growing gap is that the magnitude of U.S. LNG imports in 2008 depends on the balance between world supply growth and the intensity of demand outside the United States. "Whether the U.S. imports more LNG in 2008 than in 2007 is probably finely balanced at present and will depend upon which is greater -- new global supply growth or the increase in supply shortfall in non-U.S. markets," said Martin Houston, BG Group Plc's executive vice president and managing director for the Americas and global LNG.

Well LNG shipments to the U.S, fell 53 % in 2008, while those to Spain, the world's third-biggest buyer, rose 19% to a record, I understand

Use of imported LNG in the U.S. fell to 347.8 billion cubic feet this year from a record 738.2 billion in 2007 and Spanish LNG imports climbed to 967.6 billion from 812.8 billion, Pan EurAsian Enterprises Inc., a U.S. energy consultant, said in a preliminary report.

Domestic gas output in the U.S. increased after companies found new sources of the fuel in shale, depressing prices and demand for imported LNG. Spain's gas use rose after power plants burnt more of the fuel to compensate for lower hydropower output and higher coal costs last summer. “A potential glut of LNG on the global markets could precipitate a natural gas price war in the U.S.,” according to the report.

There may be an oversupply of LNG in 2009 and 2010 because new projects are starting up in Yemen, Russia, Peru, Qatar and Indonesia, while a global recession has depressed demand in Japan and South Korea, the world's two biggest LNG users. Natural gas futures closed in New York at US$5.62 per million British thermal units yesterday, the lowest year-end price since 2002. “The volatility in natural gas prices over the course of the year reflects the rapidly changing markets for crude oil and energy products,” the U.S. Department of Energy said in a report on its Web site on Dec. 18. “Reduced prices for natural gas in recent months relate to an improved

outlook for supplies, particularly because of reported increases in domestic production at unconventional fields such as the prolific Barnett Shale in Northeast Texas." Total U.S. marketed natural gas production is expected to increase by 5.4 % in 2008 and by 0.9% in 2009 after companies found supplies trapped in shale at fields in Texas, Wyoming and Louisiana, the U.S. Department of Energy said in the Short-Term Energy Outlook report on Dec. 9 on its Web site.

U.S. LNG imports were expected to total about 360 billion cubic feet in 2008 and slightly over 400 billion in 2009, well below the 2007 level, according to the report.

Cambridge Energy Research Associates has estimated that, since 2002, upstream capital costs as part of an LNG project have risen by well over 200%. That reflects industry observations that capital costs of annual capacity in an LNG project have risen to between $800 – 1000/tonne in 2008 from $ $600/tonne in 2006 and $200/tonne in 2002. We may expect the 2008 figure to start to decline as the impact of lower material and equipment costs and availability of construction resources start to feed through.

Fuelling this growth has been surging Chinese demand for all industrial raw materials, pushed by double-digit annual gross domestic product growth over the last 5 years. The effect has had every major industrial project in the world, especially energy projects, scrambling for sufficient materials and skilled labour. Aggravating these shortages in materials and people, in the view of some observers, was the double-edged sword of natural gas prices. We may expect this to reverse now as China continues to cool down and their factories continue to close down. Forecasters believe that GDP growth could fall below 6% in 2009 and conventional wisdom suggests that social stability starts to unwind if growth tumbles much below 8%. Others believe that the $586 bn economic stimulus package involving huge public works spending may deliver protection from turmoil and keep growth hovering at least above 7%.

Elevated gas prices since the mid-1990s have in part spawned the resurgence of LNG as a transportation mode. But in markets where prices have hit particularly high levels, they have driven energy demand towards competing fuels, especially coal, even with expensive cleanup technologies. Some project developers, therefore, have been reluctant to invest massive capital and extensive time if natural gas demand is not more certain.

Complicating this dilemma are the differing behaviours of the world's three major LNG markets: Asia, the historical leader, broadly indexes LNG prices to crude oil; the US pegs them to the Henry Hub gas price; and Western Europe has several pricing centres with little uniformity-and therefore predictability-among the several nations.

Finally, an unexpected consequence of the flow of wealth to formerly developing nations is that their domestic gas demand have risen and threatens to siphon off gas initially intended for international trade, thus tightening global supplies. By year end 2008, some of these issues may be sorted out as growth of industry's capacities crests and leads to several years of consolidation before the next wave begins in 2013-14.

Even with a cautious approach prevailing, there is still a decent chance that this year could see more project sanction pen action than last. Let’s take a closer look.

Chevron and Shell are holding back on construction projects from Australia to Nigeria, which could force up LNG prices for years to come. The primary reason is that the cost of building LNG plants has tripled in six years, according to Bechtel Group, the biggest US contractor.

The Gorgon project on Barrow Island, off northwest Australia, projected to cost as much as $20.0 billion, is among the major ventures that have been delayed, with an FID now slated for March 2009 or maybe a few months later

None of the world's biggest energy companies approved developments this year with the exception of the Arzew project in Algeria awarded to the Saipem / Chiyoda JV, as reported above.

"Costs have been going up and they were going up far faster than anybody expected," said Andy Flower, a UK-based consultant to the LNG industry and a former BP executive. He forecasts that the world LNG shortage will last until at least 2011. Well he keeps popping up and making a living in that most difficult of games (forecasting) – well I have been following his words of wisdom for 15 years now and he seems to survive. Well there is NO LNG shortage and costs are now coming down.

Gas may become more important than oil in the next 50 years because crude supplies are running out faster, according to the International Energy Agency. Global oil and natural gas reserves were about the same at the end of 2005, equal to 1.2 trillion barrels of crude, according to data compiled by BP.

Oil reserves are being burned almost twice as quickly as gas. LNG sales rose about 11% last year to 157 million tonnes, according to Wood Mackenzie Consultants in Edinburgh. It could jump about 66% to 261 million tonnes in 2010 and another 87%to 488 million tonnes by 2020, the group said.

Record LNG prices would not fall for "years to come", said Ari Soemarno, president of Indonesia's state energy company, Pertamina, until 2005 the world's largest LNG exporter. Prices under multi-year contracts, excluding freight and insurance, range as high as about $US10 per million British thermal units in Asia, assuming $US60 a barrel for oil, part of LNG price formulas. Well that’s forecasting for you!

The cost of building liquefaction plants has risen to as much as $US1200 million ($770 million) for each million tonnes of annual production from about $US200 million in 2000, according to San Francisco-based Bechtel.

Former Federal Reserve Chairman Alan Greenspan in June testified in Congress that LNG is "very important for the US, for our national security" and has argued for increased investment. "We have not picked up as quickly as we need" to increase imports, he told the Senate Foreign Relations Committee in Washington about energy security and economic risk. He declined to comment for this story.

Two of the newest and biggest LNG projects have been over-budget and late. Sakhalin-2 LNG in Russia has doubled in cost to more than $US20 billion. Snohvit LNG has cost $US9.5 billion, almost 50 per cent more than first anticipated in 2002. Building LNG plants now takes four years, rather than three, because contractors are stretched, said Mr Flower, the consultant.

"Construction and permitting of LNG plants is a lengthy process," BP spokesman David Nicholas said from London.

Politics and violence also hold back LNG developments. In the seas between Australia and East Timor, development of the $Multi billion Sunrise LNG project has been stalled for more than two years as the nations resolve how to split royalties.

Shell, the world's largest non-government producer of LNG, is struggling with projects in Nigeria because of rebel attacks and in Iran, where threats of sanctions over the nation's nuclear research program restrain investment. Iran has the world's second-largest gas reserves.

American politics also get in the way. BHP Billiton missed a target to win government approval in California for an $US800 million import terminal near Malibu last year. Celebrities including actors Pierce Brosnan, Halle Berry, and Tom Hanks, rock musician Sting and supermodel Cindy Crawford campaigned against the plant over safety concerns. The "not in my backyard" syndrome was among the obstacles in the US, Dr Greenspan said in June. "It's going to take a while" to increase supplies, he said.

So where to we stand with the current slate of LNG prospects?

SEGAS Egypt is still moving forward but much more slowly than we thought last year - not expected to proceed until 2009 maybe later. No news on any expansions at the BG site at Idku either.

Nigerian activity is unlikely to move into EPC until 2009 - remember there are four major prospects - gas supply and local politics continue to intrude and even 2009 may be optimistic

Mauretania looks a long long way off – could be a floater.

In Equatorial Guinea there are rumours of a second train with both Union Fenosa and Gazprom being mentioned but not at the same time!

Libya is planning – rehab on the old trains and longer term for new builds – but probably not next year.

The Iranian prospects were four a couple of years ago, they are now two in number and their future is not yet certain as they no longer have any partners with any serious LNG experience it will prove to be very difficult.

Nothing much is happening in Malaysia (an expansion Train possibly in a few years)

In Indonesia (no sign of an expansion Train at Tangguh) but JGC will probably start the Senoro-Donggi LNG project on Sulewesi in the next few months. In Bontang they have been considering a 9th Train for the past 10 years but it still remains on the 'drawing board and even that is probably optimistic !

Chiyoda Corp. has been awarded the EPC competition contract for ExxonMobil's Papua New Guinea LNG plant and associated facilities- Bechtel are the other contender. The EPC contract will include the facilities for inlet processing, treating, liquefaction, storage and loading of 6.3 million tonnes (6.93 million tons) per annum of LNG. The contract is due to be awarded in late 2009, with construction to begin in 2010

Australia has been the most active marketplace Chevron Gorgon moving in a positive direction and with the Wheatstone site now announced that is looking more optimistic as well. There are a number in the planning stage with BHP possibly moving forward in 2010, Woodside Pluto 2 could get the nod in 2009, in Queensland both of the LNG projects (are there two?) seem to moving forward with Bechtel employed on the BG opportunity and SKEC on the LNG Ltd opportunity. Inpex have selected Darwin as the landfall for their Ichthys opportunity – still probably some way off. Finally the Sunrise FLNG opportunity has been in and out of the news for the past few months. So there you have it – Australia, once the most expensive province is now about the only hotspot left in the LNG market place. Clearly classed as a stable environment and with the birth of the modular LNG plant four or five years ago its now pretty attractive and not to far from Japan, Korea and China and if the west coast of the USA ever gets underway it will be on hand to end the stuff across the Pacific. In fact a cargo from Australia even found its way to the UK eighteen months ago.

The Sakhalin Expansion is planned but with the large delays and overspends on Phase one coming through this may move more slowly. A loan agreement totalling up to US$3.7 billion in project finance with Sakhalin Energy Investment Company Ltd. the project executor, for the Sakhalin II (Phase 2) - so there is some activity behind the scenes.

NE Europe and Russia remains outwardly active but Snohvit Train 2 is probably a minimum of 2 years away from FID and Shtokman could be 1 to 2 to years away at the earliest.

In South America, Bolivia is on the back burner probably for many years but Venezuela showed a small amount of life during the year with discussions with the Japanese Trading Houses taking place three months ago

Summing up its tells you that the forecasting game is not easy (never has been) but that there is probably still some work coming though and will surely test the metal of the so called, but now expanded 'LNG Club' eventually. Some of the locations will be very demanding and for the newcomers to the ball it may be more difficult to win the next one. It's more about Execution now than Technology, so that changes the focus somewhat. However there is a glut of LNG sailing around the world and this situation may be with us for some time.

The LNG contracting groups remain more or less the same companies - albeit changing partners to suit circumstances. The club comprises Bechtel, KBR, JGC, Technip, Chiyoda, FW, CB&I and Saipem, with Petrofac claiming the briefest of membership (one week) but creeping up by their O&M work in Africa and Worley Parsons through their work in Australia with FW. With so much l LNG work around and quite a bit it of reimbursable (in Australia) the expansion of the club was bound to happen – however whether any of the new entrants will take on LS risk is another matter (well CB&I may have answered the question) and with little new work around initially and the entrenched positions that some of the members already have, the new entrants may literally battling for the crumbs.

Another factor will be the size of Train (now setting a standard of 7 - 8 MTPA) the numbers of new trains will inevitable reduce in the future. We are seeing them in construction in Qatar and possibly in Nigeria and maybe in some of the projects that are currently on hold or under review.

As a postscript we should mention the Snohvit LNG project in Northern Norway. Well it's now more or less complete that 'joiners' fee I mentioned last year may be money ultimately well spent. We are still saying that the experience that would help them in the future in their quest for scope of work from their 24% shareholding in the Shtokman LNG project – in fact their membership may still be a big plus to Gazprom, who have been invited to participate in Snohvit Train 2 – a prerequisite to the economic success of the overall Snohvit development. Shtokman LNG is finally on the way with Technip undertaking the FEED work and some early interest being shown in the EPC Phase – it will take a long time but thankfully is at last moving forward.

Norway remains a major supplier of Gas to Europe and the UK and the supply has increased with the completion of the Britpipe from Nyhamna (well not quite as far as Nyhamna yet!) to Easington. Most of Europe perceives Norway as reliable supplier of gas (piped and hopefully LNG in the future) and the 'man on the Clapham Omnibus' is certainly now 'more aware' of the precarious state of current UK Gas supplies? Our own production is still falling away fast – now no longer self sufficient the Inter Connector has turned around and the three new LNG receiving terminals are now well on the way to completion(albeit a few months late.) More gas is being transported to both the Kollsnes and Karsto Terminals so that means further expansions and upgrades are on the way at both locations.

**GTL**

GTL has continued to move on in the past 12 months, but to be honest not very far. The EPC project under execution with Technip Italy for Sasol/Chevron plant is now complete and is producing product and an expansion programme is already in the planning stage. South Africa's Sasol says the "majority of teething problems" have been resolved, although production remains at just two-thirds of its 34,000-barrel-a-day (b/d) capacity. As part of its results announcement on 8 September, Sasol said the plant produced 22,000 b/d in June, with its GTL diesel product "commanding premiums" in the market over crude-derived diesel products." With the majority of teething problems behind us, the ramp-up of the Oryx GTL plant in Qatar met our expectations during the year," says Sasol. The project, a 51:49 joint venture of Qatar Petroleum (QP) and Sasol, has suffered several delays since its inauguration in June 2006

Sasol then said in a statement that its Oryx project would reach full production within 12 months. Statements were made at the Africa Upstream 2008 oil conference in Cape Town.

Qatar remains the centre of activity with the huge Shell Pearl project (2010/11 planned completion) leading the way. Pearl GTL, the world's largest gas-to-liquids project at Ras Laffan in Qatar, has been 50 per cent completed, a senior Shell official said. "We are on schedule for start-up by 2010 end," Shell country chairman Andrew Brown was quoted as saying by a Gulf Times report. Pearl GTL is a joint venture between Qatar Petroleum and Royal Dutch Shell. The project is Shell's single largest equity investment anywhere in the world and will produce about 140,000 bpd of GTL products as well as 120,000 bpd of condensate, LPG and ethane from two trains. Brown said some 35,000 people are now working at the project site, which spreads over 1.5 sq km, at Ras Laffan. "Large quantities of material have already reached the site. The project has made extremely good progress. It is going on very well and I am very much delighted about our achievements," Brown said. Many of you have probably seen the Pearl GTL project announcements related to the current forecast total cost which came as a surprise to many of us. Shell has however said that the current forecast is within their economic model and nothing has changed since their previous statements.

The Chevron Escravos project is in execution in Nigeria but has not been without its problems. Government's effort to end gas flaring in the country has suffered a set-back as Sasol of South Africa said that it was reviewing the Escravos Gas-To-liquid (GTL) project, with prospects of a delay in its completion and increase in cost. The following day Sasol cut its investment in the project from 37.5% to 10%.

Sasol, the world's top producer of liquids from gas, said costs are likely to increase to $6 billion (N702 billion) and the completion date delayed to 2011 from a previous start-up date of 2010.

The plant, located near Warri, about 100 kilometres southeast of Lagos, will when completed have the capacity to process about 300,000 cubic feet a day of gas into 34,000 barrels a day of GTL diesel and GTL naphtha. This, according to analysts, will help boost government's efforts to end gas flaring in the country.

The project will have the double effect of reducing gas flare and producing low-sulfur diesel fuels for international markets. The cost of the EGTL which was initially scheduled to come on stream at the end of 2010 was reviewed from $1.7 billion to $2.7 billion. Chevron had earlier said the $2.7 billon (N315.9 billion) project was on tract to meet the new start up date, even as the company said the project was still economical after the first upward review of the cost.

Linc Energy Ltd., an Australian energy company planning to convert coal into clean diesel, will locate its first commercial development in southern Australia. The Brisbane-based company plans to develop the so-called gas-to-liquids project in the Arckaringa Basin, which has enough coal resources to feed ``several'' 100,000-barrel-a-day plants. Linc is already operating a pilot 20,000-barrel-a-day GTL unit in Chinchilla, Queensland, according to the company's Web site. In addition Shell is developing a number of Coal to Liquids projects in China, which are at various stages of completion.

The Algerian project has been delayed until the future. and another project is on the drawing boards in Australia.  As mentioned earlier Exxon Mobil is taking a deep breath and shelving their Qatar GTL plant until the Pearl project is either well on its way or actually completed.

## SYNGAS

The Ammonia business (which is 65% of the Syngas Area) was looking quite healthy and with the continual food shortages continuing in many parts of the world one would imagine this will bring more demand for large new plants, continued upgrading of existing older plants for energy saving and capacity hikes but shuttering of older plants in traditional areas where the price of gas much better with old plants closing and prices recovering greatly. The big growth area has remained in the Middle East and Iran (if you can take part in the action in the latter country). KBR &Uhde dominate this market with Ammonia Casale winning some plants in the more difficult parts of the world and revamping older plants in the Eastern European theatre. but only the former two have competitive EPC offerings. Activity had been picking up and a net 15-20% of additional capacity could come on stream by 2011 which could be up to 4 major plants a year - depending on train size.

Then about six months ago the Ammonia price began to crumble and by mid December it had dropped to the range of $150-250 which has clearly slowed the market considerably. Plants are being shuttered in many areas of the world and unless there are special reasons for fertilizer manufacture and it's manufactured locally for internal consumption (e.g. Pakistan), other countries that are just beginning to develop hydrocarbon based industries e.g. The Caspian areas and those with a requirement for lower energy and some capacity increases. So there is still a little life in the market and as we know these conditions don't last forever.

With Methanol the situation is slightly different where mega plants (7,500 TPD) are now part of the landscape - one new plant a year may suffice.  This market is dominated by Methanex with technology coming from Lurgi and Johnson Matthey (DPT) with AkerKvaerner and Lurgi providing execution. Hydrogen is still important but more of a commodity these days and highly competitive to with Technip, Howe-Baker, Linde and Topsoe dominating the market place which serves Refining, DRI and to a growing extent GTL (hopefully!).

## PETRO CHEMICALS

When we review the petrochemicals sector and how the E&C sector contracts with this sector we must focus on the Middle East which is the key global centre of this sector of our industry. With falling demand, the outlook for the Middle East petrochemicals sector is increasingly gloomy. After two years of frenetic activity in the Middle East project market for petrochemicals, 2008 was a disappointing year. Huge increases in EPC costs in the first half of the year, coupled with restrictions on new gas feedstock allocations in the region led to the number of new project announcements dropping sharply since their 2006 peak. The trend looks set to continue in 2009, although for different reasons. Prices for raw materials such as steel and copper have dropped significantly over the past few months. But more important will be the effects of the current financial crisis.

As a result of the economic slowdown in the world's major economies, demand for petrochemicals, particularly polymers, is dropping. With its feedstock cost advantage, the Middle East is well placed to weather the financial storm, but the overall outlook for the sector appears grim Ð margins will be squeezed all round. Polyethylene prices have already taken a dive, to $1,117 a tonne at the end of November, from their March 2008 high of $2,123 a tonne.

Some project delays have already been announced. For the projects already under way, the owners will be under increasing pressure to get new plants up and running, to generate cash to repay loans. Saudi Arabia's PetroRabigh has delayed the start-up of its 700,000 t/y polypropylene plant from the end of 2008 to the first quarter of 2009, at the earliest. Some sources estimate this delay could add as much as $300m to the cost of the $10bn refining and petrochemicals complex because of the lost revenues. But those projects that are still in the planning phase could be in a better Position: due to the slowdown, as the cost of building materials continues to fall.

Saudi Aramco and Total delayed the bidding process by three months for their previously announced joint venture at the Jubail refining and petrochemicals complex. Changed conditions, including the current financial crisis, were the main reasons cited for the delay, allowing contractors to present more realistic bids. Contractor submissions are now expected in February 2009, and contracts are expected to be awarded in the second quarter.

But those projects without financing in place are on shaky ground. New projects in the region may have to be put on hold or cancelled altogether if credit becomes harder to find. International banks that are heavily involved in project financing in the Middle East Ð such as the UK's Royal Bank of Scotland, which has the mandate to arrange financing for the $26bn Ras Tanura complex in Saudi Arabia Ð will be forced to focus on credit expansion in their home markets.

According to MEED Projects, $49.6bn worth of petrochemicals projects in the GCC, Iran and Iraq are due to begin in 2009. No contract awards have yet been made, but invitations to bid have been released for projects totaling $5.5bn in value. Outline designs are in progress for 25 projects with a total value of $31bn. There are six projects still at the feasibility stage. Seven projects, worth a total of $9.8bn, are on hold. But the picture for 2009 is not entirely gloomy. Saudi Arabia continues to lead

cap-acity increases in the region. Its petrochemicals sector is now seeking to acquire the technology from Asian petrochemicals firms, in order to produce more advanced products.

Iran could also be a big player in 2009 and beyond, particularly in export markets, although its relations with the international community, with sanctions on equipment and finance, could impede its projects. According to the Iran Petrochemical Commercial Company, in the first two months of the current Iranian year, which started on 20 March 2008, the value of petrochemicals exports was $1.26bn The forecast for the end of 2009 is a total export value of $9bn, representing 62 per cent of the Iranian petrochemicals industry's total sales, and reflects the importance the Iranian government is placing on petrochemicals exports.

Abu Dhabi-based Borouge is leading the UAE industry, with one ethane cracker operating and a second due to be completed by the summer of 2010, which will bolster its Position: as a major player in polyolefins. In addition, outline designs should be completed by the end of 2009 for the world-scale naphtha cracker at the Chemaweyaat complex in Taweelah. Production of ethylene and derivatives could be on line as early as 2013.

With the market for petrochemicals set to be weak in 2009, it could be a good year in which to acquire competitor producers. For Middle East producers, market analysts are predicting a flurry of mergers and acquisitions, partly in their bid to quickly acquire the technology Asian producers already have, and partly as a means of taking out the competition.

At this stage it is probably worth mentioning that the boom has thinned out bidders list in both numbers and quality. All the major EPC contractors were full of work and loathe to pursue too many hard price projects in the Middle East. This then lets in second tier (or worse) contractors who don't have the level of expertise or experience or perhaps even financial muscle to execute the work successfully. I am not sure how many major projects did proceed on this basis, not too many I am sure – the major Middle east took the sensible way out and tended to postpone projects rather than run themselves into trouble.

However there was mega trouble for some of the major petrochemical companies – as the year turned we have witnessed gruesome news from some of the household names – it’s not quite a deck of cards yet but the problems are mounting.

BASF has been one of Germany's best performing companies for decades, withstanding the Great Depression, World War II and the 1970s oil crisis. Now, though, the company has to radically reduce output as it is hit hard by the global economic downturn. BASF is turning into a surprise victim of the global economic downturn. There is a park in front of their HQ which features a furnace -- five metres high, one and a half metres in diameter -- that stands on the lawn next to a commemorative plaque. This pioneering device was the main component of the first facility to manufacture ammonia (NH3), and it's easy to understand why BASF is proud of it. German scientists Fritz Haber and Carl Bosch, its inventors, were awarded the Nobel Prize in chemistry. The Badische Anilin- und Sodafabrik (BASF) in Ludwigshafen on the Rhine, founded in 1865, rapidly became a major global company. Without this process, the struggle against hunger would be hopeless. They

have calculated that in a world without ammonia roughly half of mankind would die of hunger because there would be no chemical fertilizer. That is certainly sombre food for thought.

The ammonia plant weathered the stock market crash of 1929 just as well as it survived the bombings of World War II, the oil crisis of the 1970s and the recession of 2001. "Annual production of ammonia is increasing worldwide with continuously growing demand" is another sentence on the commemorative plaque. For the employees of BASF, this phrase has always held the promise of a bright future. or now, the company's balance sheets don't look bad. But management is concerned about the immediate future.

This makes the events of the past few weeks in Ludwigshafen all the more disturbing. Back in October, the company had to reduce its production of caprolactam, this was followed shortly thereafter by a slump in the production of polystyrene Not a week went by after that without some machine on the premises having to be shut down. It has become unnervingly quiet at BASF. A total of 40 large-scale units worth billions of euros have suddenly come to a standstill.

The slowdown eventually hit A3, as the ammonia facility here is called. On normal days the unit produces more than 1,000 tons. Aside from the symbolic importance of this product, it generates potential sales of roughly €300,000 ($400,000) a day, a significant amount, even for a major player like BASF. But in mid-November the company extinguished the waste gas plume, the eternal flame of the chemical industry. Since then, the approximately €500-million unit, which is normally operated in shifts, has not produced a single gram. Production at the second ammonia unit nearby, known as A4, has been reduced to a bare minimum. No one knows how long it will continue to run.

BASF has never experienced anything like it. It's a puzzling situation for BASF. Could it be that the world suddenly no longer needs ammonia? Back in September, there weren't many indications of a crisis. But that made the effects of the recession all the more profound as customers suddenly began cancelling their orders. Within only a few weeks, the market had virtually collapsed.

The situation at BASF illustrates how the crisis has reached the core of the global chemical industry. And it has dashed hopes that the destructive force of the recession would be limited to financial high-flyers, venture capitalists and the mismanaged automotive industry. There is no reason to succumb to a mood of gloom and doom, says BASF CEO Jürgen Hambrecht, but he is bracing himself "for very difficult times," and that is ominous news for the employees at Ludwigshafen -- as well as the German economy as a whole.

BASF has always been the pride of German industry. It outperformed cheap suppliers on the world market with quality and innovative products made in Germany. The company expanded throughout the world without firing for economic reasons even a single employee at its original German headquarters. Instead of speculative stock market gains, BASF held out the possibility of solid dividends. It strictly adheres to all government environmental regulations, works closely with the chemical trade union, and requires the wearing of hard hats throughout the company premises.

The CEO has a Ph.D. in chemistry and speaks with a pronounced southern German accent. With his no-nonsense haircut and preference for rather inexpensive suits, Hambrecht has always stood in contrast to the arrogant manager types that occupy the board rooms of other companies. When German Chancellor Angela Merkel travels abroad with a delegation of German business leaders, Hambrecht is especially welcome to come along. The company has a long history of good political connections. Former Chancellor Helmut Kohl, who once worked part-time at BASF to pay his way through college, loved to visit the plant, which even boasts its own wine cellar and a cafeteria that occasionally serves his favourite dish -- stuffed pig's stomach with fried potatoes.

But now it looks as if BASF is not robust enough to ride out the crisis unscathed. On two occasions in less than two weeks, the company has had to revise downwards its business forecast for 2009, something that has never happened under Hambrecht's solid leadership. Within just a single hour, the company's shares temporarily lost nearly 20 percent of their market value. That corresponds to roughly €5 billion, which analysts saw as an incredible overreaction, but it accurately reflects how strained nerves have become during the current crisis.

There is a large map of the world hanging on the wall of the visitor centre at the main BASF plant in Ludwigshafen. Major production plants are marked with dark circles, and smaller ones with a dot. This is the map of a global corporation. With the exception of Africa and parts of Eastern Europe, there is no region that doesn't have dozens of branch facilities.

I take no pleasure in lifting this article from Spiegel Online – a paper I normally only read when I want to bring myself up to speed with German soccer and the miracle of Hoffenheim ( a tiny village team in Swabia that is second in the Bundesliga and is sponsored by SAP – I rest my case). But seriously this is a salutary tale of our industry in this year 2009.  I can add the escape to Chapter 11 of the US Company of Lyondell Basell announced yesterday, the impending problems that Reliance Industries and Ineos must face up to over the next few weeks.

**THE DENOUMENT**

In spite of this rather sombre ending to my (extended) end of year letter try to focus on the things that you can do to help our great industry. We are durable and flexible and we will fight our way through this current problem. Yes it's as bad as it gets and may get worse before it gets better but remember whatever your age we can all learn from our current trouble. This is my 4th or 5th down cycle and probably my last as a fulltime employee – if it's as bad as the mid 1980's it will test all of us. Remember its a very good to be a young person in our industry at this time (we must do all we can to grow our leaders of tomorrow) and as I was going to say 'it's also a good time to be 'grey' in the industry - we have been here before and can probably pass on the odd bit of advice to our younger colleagues. As I would say enthusiasm is everything (if you don't have it, it's time to throw in the towel), and our generation (like never before) must be prepared to pass on all we know to the next generation – don't hang back Demographically we are as high in numbers as we ever will be (relative to the size of our industry) - so it's now or never.

So hang on in there and hopefully you will receive some of the answers next year - I hope to still be here or at least somewhere to send them to you!

So what can we forecast for this year:-

1) A slimmed down global E& C industry. The UK E&C workforce to be around 15,000 by December 2009 – a 15 to 20% reduction in numbers.
2) There will be one or two mega mergers with some of the large IOC's involved
3) A lot of the smaller oil companies will either be taken over or will have gone out of business unless the credit crunch eases.
4) There will be one or two failures within the E&C fraternity and this may lead to takeovers – you should spot some of the candidates in the E&C Company section.
5) Don't see any mega mergers in the E&C Sector – I am sure there are some in gestation so it's not impossible for something to happen.
6) Many of the mega projects in the Middle East will continue to be delayed

So there it is – 2006 was a better year than 2005 and 2007 was a better year than 2006 and it seemed for some months that 2008 would be the best yet – it failed to make it but what of 2009? As long as the contractors can execute what they sell with predictability of schedule and cost and within the best HSE parameters it will help us get through this. There will not be enough work for everybody from the super giants to the bottom fishers and even some for the plankton. Save for the 60's and 70's when the industry was really taking off globally we are leaving a three year run when we thought the opportunities had never been greater. There are however quite few dark clouds out there – there has been a strand passing through many of the above paragraphs which says Cost, Cost and more Cost! As we know backlogs which seem healthy at the start of the year can look very thin if not replenished through the year and sadly that's where some of us are heading now.

However keep your fingers crossed and enjoy the ride

The statements in the above account are solely the personal views of Roderick J Dean and may not be attributed to any organisation or other person.